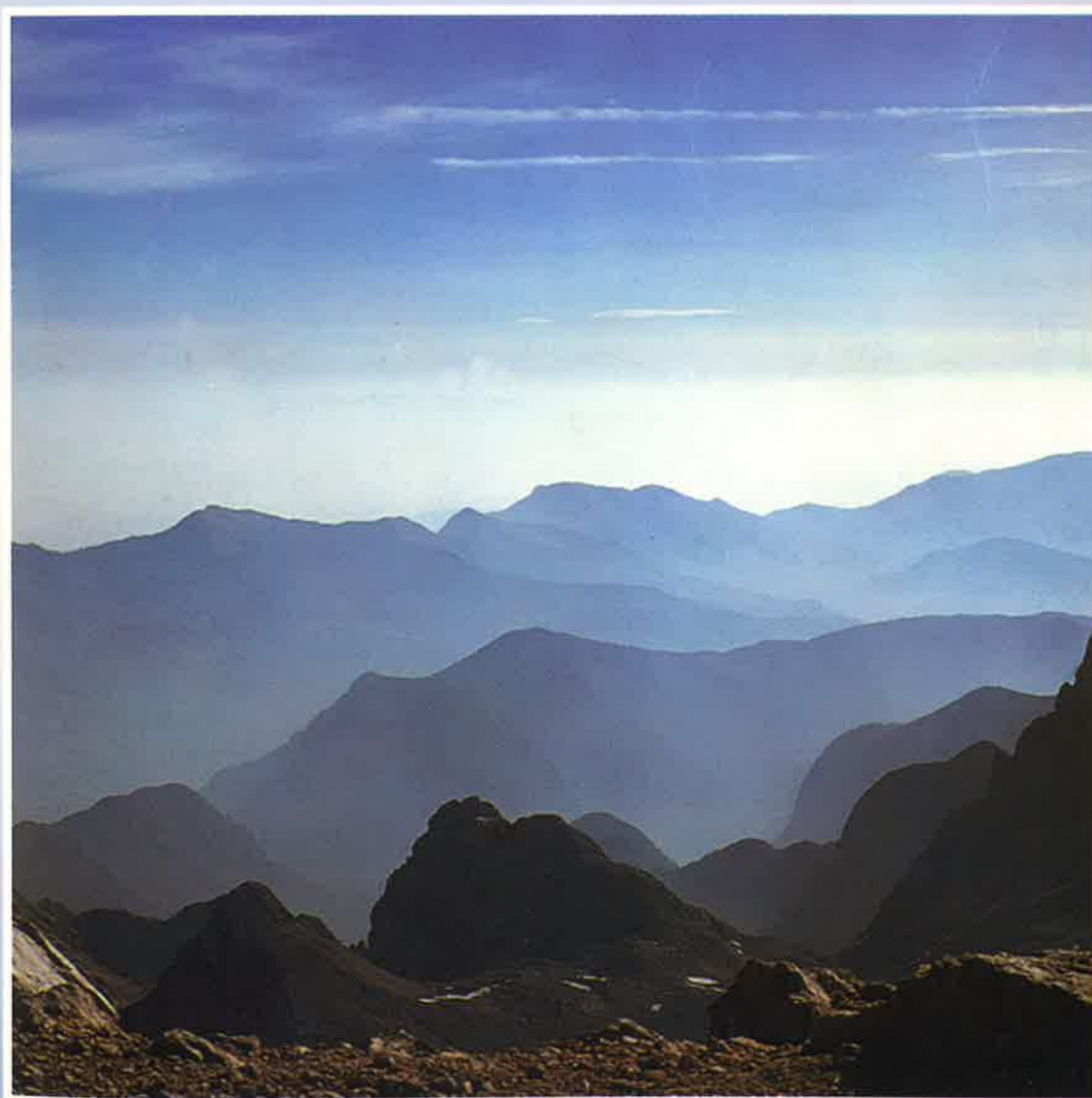


# PREŽIVETJE BOLNIKOV Z RAKOM V SLOVENIJI

## CANCER PATIENTS SURVIVAL IN SLOVENIA

Vera Pompe-Kirn  
Branko Zakotnik  
Neva Volk  
Tomaž Benulič  
Janez Škrk

1963-1990







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ONKOLOŠKI INŠTITUT  
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avtorji authors	Vera Pompe-Kirn Branko Zakotnik Neva Volk Tomaž Benulič Janez Škrk
oblikovanje design	Monika Fink-Serša
računalniška obdelava EDP analysis	Jurij Modic
slike in tabele figures and tables	Sašo Celarc
lektorica za slovenščino reader for Slovene	Zlata Pavlič
lektorji za angleščino readers for English	Olga Shrestha Alan McConnell-Duff
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Prof.dr.Boženi Ravnihar  
avtorji

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O IZSLEDKIH SO RAZPRAVLJALI  
THE RESULTS WERE DISCUSSED BY

USTNA VOTLINA, ŽRELO, GRLO  
ORAL CAVITY, PHARYNX, LARYNX

prof.dr.Marjan Budihna specialist radioterapevt in onkolog  
Radiation Oncologist  
prof.dr.Lojze Šmid specialist otorinolaringolog  
Otorhinolaryngologist

ŠČITNICA  
THYROID

prof.dr.Marija Auersperg specialist kirurg  
Surgical Oncologist

PLJUČA  
LUNGS

prof.dr.Miha Debevec specialist radioterapevt in onkolog  
Radiation Oncologist

DOJKE  
BREAST

prof.dr.Jurij Lindtner specialist kirurg  
Surgical Oncologist

PREBAVILA  
DIGESTIVE ORGANS

dr.Tomaž Benulič specialist radioterapevt in onkolog  
Radiation Oncologist  
prof.dr.Franc Lukič specialist kirurg  
Surgical Oncologist  
doc.dr.Saša Markovič specialist internist  
Medical Oncologist

SEČILA IN MOŠKA SPOLOVILA  
URINARY AND MALE GENITAL ORGANS

prim.dr.Franc Marolt specialist radioterapevt in onkolog  
Radiation Oncologist  
dr.Marjeta Stanovnik specialist internist  
Medical Oncologist

ŽENSKA SPOLOVILA  
FEMALE GENITAL ORGANS

doc.dr.Peter Fras specialist radioterapevt in onkolog ter ginekolog  
Radiation Oncologist and Gynecologist

KRVOTVORNI ORGANI  
HEMATOPOETIC ORGANS

dr.Jožica Anžič specialist pediater  
Pediatric Oncologist  
doc.dr.Peter Černelč specialist internist, hematolog  
Hematologist

dr.Marija Jenko specialist internist  
Medical Oncologist

dr.Gabrijela Petrič-Grabnar specialist radioterapevt in onkolog  
Radiation Oncologist

mag.dr.Marjeta Vovk specialist internist  
Medical Oncologist

KOŽA  
SKIN

dr.Boris Jančar specialist radioterapevt in onkolog  
Radiation Oncologist  
prof.dr.Zvonimir Rudolf specialist radioterapevt in onkolog  
Radiation Oncologist

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## PREDGOVOR

Ko pridejo bolniki z rakom k svojemu zdravniku, imajo često za seboj izkušnje z drugimi boleznimi in zdravljenji. Običajno so te izkušnje ugodne, zdravnik jim je pomagal in na posledice bolezni so se navadili.

Pri raku dostikrat ni takih izkušenj; kljub skrbi zdravnikov se bolnikovo zdravstveno stanje vedno ne izboljšuje, lahko se le ustali na nezadovoljivi ravni ali se celo poslabšuje. Bolniki zato sprašujejo svojega zdravnika o pričakovanem poteku njihove bolezni in žele si odgovor, ki bo veljaven le zanje z upanjem na izboljšanje, če že ne na ozdravitev. Ne sprašujejo: "Kdaj bom umrl?", ampak "koliko časa bom še živel?". Želijo živeti in to željo urediti z zdravnikovo pomočjo. Pri odgovoru si zdravnik pomaga z lastnimi, posameznimi izkušnjami ali s podatki o preživetju, ki zajemajo večje število bolnikov. S pomočjo obojega bo lažje odgovoril na težko vprašanje o pričakovanem preživetju bolnika, ki je le posameznik med številnimi bolniki z rakom.

O raku se danes veliko piše in tudi ljudje vedo danes o njem več kot nekoč. Želeli bi, da bi pričujoča knjiga pripomogla k še boljšemu razumevanju pričakovanega poteka rakave bolezni in optimističnejšemu pogledu na zdravljenja raka.

## PREFACE

When patients see their doctor because of cancer, they mostly have already had some previous experience with other diseases and treatments, generally associated with a favourable outcome: the doctor had helped them and they got used to the consequences of the disease.

The experience with cancer is different; despite medical care, the patient's condition is at times not improving, may stagnate at an unsatisfactory level or even becomes worse. The patients therefore ask questions about their disease, hopefully expecting an answer that would explain their particular case and give at least a promise of improvement, if not cure. They do not ask: "When am I going to die?", but rather "How much longer shall I live?". They want to live and they expect to do so by the help of their doctor. In answering, the doctor resorts to his own treatment experience or to the survival statistics derived from a larger number of patients. This facilitates the doctor's position in dealing with the queries, and trying to provide an answer to the complex question concerning the expected survival of an individual patient who happens to be only one among many others affected by this disease.

A lot is being written about cancer nowadays, and people know more about it than they used to in the past. This book is intended to contribute towards an even better understanding of the expected course of cancer, and a more optimistic attitude to cancer treatment.

## UVOD

V Evropi in drugod po svetu ni veliko populacijskih registrov raka, ki zbirajo, arhivirajo in obdelujejo podatke o incidenci raka, poleg tega pa še spremljajo preživetje bolnikov z rakom. Še manj je takih, ki zbrane podatke izdajajo v posebnih publikacijah.

Podatki o preživetju vseh bolnikov z rakom so kompleksna ocena bremena raka v opazovani populaciji. Zrcalijo uspešnost vseh programov onkološkega varstva, od množičnega presejanja in zgodnjega odkrivanja, do zdravljenja, rehabilitacije in dolgoletnega spremljanja zdravstvenega stanja bolnikov. Na preživetje bolnikov z rakom vplivajo številni dejavniki, ki so povezani tako z bolniki samimi: starost, spol, telesna zmogljivost in spremljajoče bolezni, kot z rakom: razširjenost bolezni v času ugotovitve diagnoze, histološka vrsta in način zdravljenja.

Register raka za Slovenijo spremlja vitalno stanje registriranih bolnikov od svoje ustanovitve, to je od leta 1950 dalje. Danes je spremljanje teh bolnikov enostavnejše kot je bilo v 50., 60. in še v 70. letih. Tedaj so poleg osebja Registra raka zbirale vse potrebne podatke še patronažne sestre v zdravstvenih domovih in matični uradi krajevnih skupnosti in občin. Danes lahko s pomočjo računalnikov avtomatsko povežemo podatkovno bazo Registra raka za Slovenijo s podatkovno bazo Centralnega registra prebivalstva Slovenije ob doslednem spoštovanju določil Zakona o varstvu osebnih podatkov. Podatki o vitalnem stanju rakavih bolnikov se tako redno letno dopolnjujejo in manj bolnikov je izgubljenih iz opazovanja.

Do sedaj je Register raka za Slovenijo objavil podatke o preživetju bolnikov z rakom v članku v Zdravstvenem vestniku leta 1984 (1), v številnih člankih o epidemioloških značilnostih posameznih rakov in kot grafične priloge v rednih letnih poročilih Incidenca raka v Sloveniji (2).

Pričujoča publikacija je prvo obsežnejše poročilo o preživetju vseh registriranih bolnikov z rakom v Sloveniji. V njej so predstavljeni podatki o preživetju bolnikov, ki so zboleli za rakom v obdobju 1963-90. Ti podatki so končen izid oskrbe in zdravljenja teh bolnikov v Sloveniji v zadnjih 30. letih. Dobra oskrba in zdravljenje v eni bolnišnici sta lahko izboljšala preživetje tam zdravljenih bolnikov. Na pomembnejše izboljšanje populacijskega preživetja pa sta vplivala le, če sta bila dosegljiva večini bolnikov v Sloveniji.

## PODOBNE PUBLIKACIJE V DRUGIH DRŽAVAH

Prva publikacija o preživetju bolnikov z rakom je izšla leta 1961 v ZDA izpod peresa Cutlerja in Edererja (3). V 70. letih in v začetku 80. let so podobne publikacije izdale še Norveška, Anglija, Finska, Poljska in Nova Zelandija (4, 5, 6, 7, 8). Kasneje so postali zanimivi predvsem zemljevidi incidence raka. Nov val poročil o populacijskem preživetju rakavih bolnikov s poudarkom na trendih preživetja so sprožila poročila iz Kanade (Saskatchewan, Alberta) (9,10), Avstralije (Južna Avstralija) (11) in italijanske province Latina (12). Leta 1993 so s tovrstnimi publikacijami sledili še Škotska (13), Quebec iz Kanade (14) in Danska (15). Nekateri registri

## INTRODUCTION

Not many population-based cancer registries in Europe or in other parts of the world have been able to follow up registered cancer patients for a period of many years. Even fewer cancer registries have published their data on trends in cancer survival in special publications.

Country-wide cancer survival data collected by population-based cancer registries do, however, provide a comprehensive and complex measure of cancer burden in the observed population, as well as an evaluation of the effectiveness of cancer patient care in the country. They reflect the impact of all measures in cancer control programmes, from mass screening to treatment, follow-up and rehabilitation of cancer patients. The observed survival rates are influenced by many patient- and cancer-related factors: e.g. age, sex, performance status and concomitant diseases of the patient, as well as stage, histology and treatment of cancer.

The Cancer Registry of Slovenia has been following up the registered cancer patients since it was first established, i.e. from 1950 on. Nowadays the follow up is much easier than it used to be in the 50's and 60's. At that time a full-time clerk in the Registry and a number of nurses and clerks in 60 communes of Slovenia were needed to collect the necessary information. Today, modern computer facilities permit automatic data linkage between the Population registry of Slovenia and the Cancer Registry of Slovenia, thus rendering the follow-up much more complete.

The Cancer Registry of Slovenia published cancer patients' survival data in an informative paper on cancer survival in Slovenia in 1984 in the Slovene Medical Journal (1), in papers dealing with epidemiological description of particular cancers or as graphical enclosures in our regular annual reports, Cancer Incidence in Slovenia (2).

This publication is the first comprehensive report on trends in cancer survival in Slovenia. It covers the period 1963-90 and indicates the effectiveness of cancer patient care in the last 30 years in the whole of Slovenia. Efficient patient care in any single hospital could have improved the survival in that hospital. However, the improvement of the population-survival could have been possible only if this efficient patient care and treatment was made available to a larger number of cancer patients in Slovenia.

## SIMILAR PUBLICATIONS IN OTHER COUNTRIES

The first publication on cancer survival was issued in USA in 1961 by Cutler and Ederer (3). Similar publications were printed in Norway, England, Finland, Poland, and New Zealand in the 70's and in the beginning of 80's (4,5,6,7,8). Later on, the publishing of Cancer Atlases became more popular and required. A new wave of producing comprehensive reports on population cancer survival and especially on trends of survival began in 1991 in Canada (Saskatchewan, Alberta) (9,10), Australia (South Australia) (11), and Italy (Latina) (12). It was followed by Scotland (13), Quebec (Canada) (14) and Denmark (15) in 1993. In addition a num-

so zbrane podatke o preživetju dodali svojim letnim poročilom o incidenci raka: Alberta v Kanadi (16), nekdanja Vzhodna Nemčija in Saarland v Nemčiji (17, 18), ženevski kanton v Švici (19), Norveška (20), regija South-East Thames v Veliki Britaniji (21), regija Eindhoven na Nizozemskem (22). Registri iz Estonije (23), dveh regij na Poljskem (Krakow, Varšava) (24, 25) in iz švicarskega kantona Vaud (26) so podatke o preživetju objavili v mednarodnih revijah z onkološko in epidemiološko tematiko. Države Evropske skupnosti so pripravile skupno analizo preživetja bolnikov z rakom po posameznih regijah in državah Evrope (27).

## PODATKI IN METODE

### REGISTRACIJA RAKA V SLOVENIJI

Register raka za Slovenijo (Register) je bil ustanovljen leta 1950 pri Onkološkem inštitutu v Ljubljani na pobudo in pod vodstvom prof.dr.Božene Ravnihar, kot posebna služba za zbiranje, obdelavo, arhiviranje in analizo podatkov o incidenci raka in o preživetju bolnikov z rakom v Sloveniji. Od tedaj je prijavljanje raka in spremljanje zdravstvenega stanja bolnikov z rakom zakonsko predpisano in obvezno (Ur. l. SRS, št. 10/50, št. 29/50, št.14/65, št. 1/80, št. 45/82, št. 42/85, Ur. l. RS, št.9/92). Podrobneje ga je določil še Pravilnik o prijavi in kontroli rakavih bolnikov in o drugih tehničnih vprašanjih boja proti raku (Ur. l. SRS št. 4/66).

Register zbira informacije o bolnikih in njihovi rakavi bolezni. Bolnika identificira s pomočjo enotne matične številke občana (EMŠO) in posebne registrske številke, ki jo dobi ob prvi prijavi. Njegovo bolezen lahko identificira samo s pomočjo posebne registrske številke.

Glavni viri podatkov so bolnišnice v Sloveniji, ki uporabljajo poseben obrazec Prijava rakave bolezni. Te podatke Register dopolnjuje z zdravniškimi poročili o vzroku smrti in obdukcijami zapisniki, v katerih je omenjena diagnoza rak, ter s prijavi iz zdravstvenih domov.

Podatki o bolezni so: primarna lokacija, histološka vrsta, razširitev bolezni (klinična in kirurška), način ugotovitve diagnoze ter način zdravljenja.

Register šifrira primarno lokacijo raka od leta 1968 po 8. reviziji Mednarodne klasifikacije bolezni, poškodb in vzrokov smrti (MKB-8) (28). Podatki iz let 1961-1967 so bili prevedeni v MKB-8 v letu 1993. Histološke vrste šifrira od leta 1983 dalje po Mednarodni klasifikaciji za onkologijo (ICD-O) (29), pred tem pa je uporabljal šifrant SZO: WHO/HS/CANC/24. I. (1956). Razširitev bolezni šifrira po TNM stadiju (če je ta na prijavnici naveden), sicer pa že od leta 1961 uporablja lasten šifrant, s pomočjo katerega grobo razvršča posamezne primere bolezni v lokalizirano, regionalno in oddaljeno razširjeno bolezen. Podobno razvrščajo razširitev tudi drugi populacijski registri raka in pri tem upoštevajo vse preiskovalne metode, vključno operacijo; če bolnik ni bil predhodno zdravljen, pa tudi obdukcijski izvid. Podatki v naši analizi preživetja so opredeljeni po tem zadnjem šifrantu.

ber of other cancer registries added the gathered survival data to their annual reports on cancer incidence, e.g. Alberta (Canada) (16) the former DDR part and Saarland in Germany (17, 18), the canton of Geneva in Switzerland (19), Norway (20), The South-East Thames region in England (21), and the region of Eindhoven in the Netherlands (22); or else they published them in special papers in different international oncological or epidemiological journals, e.g. Estonia (23), the Krakow and Warsaw region in Poland (24, 25), and the canton of Vaud in Switzerland (26). The European community countries prepared a joint analysis of cancer patients' survival in some European regions and states (27).

## DATA AND METHODS

### CANCER REGISTRATION IN SLOVENIA

The Cancer Registry of Slovenia (Registry) was founded in 1950 at the Institute of Oncology in Ljubljana, at the initiative and under the leadership of Professor Božena Ravnihar, as a special service for collecting, processing and analysing data on cancer incidence and cancer patient survival. Since then notification and follow-up of cancer patients has been compulsory in Slovenia (Official Gazette of SRS, No. 10/50, No. 29/50, No.14/65, No.1/80, No.45/82, No.42/85, and Official Gazette of RS, No.9/92). A detailed definition of these activities was given in the "Regulation on notification and follow-up of cancer patients and other technical aspects of anti-cancer activities" (Official Gazette of SRS, No. 4/66).

The Registry collects a range of patient- and cancer-related information: the patients are identified by their personal identification numbers and by unique registration numbers, and each particular patient's cancer by his unique registration number only.

The main data sources are notifications gathered from all hospitals in Slovenia. This information is completed by death certificates, which are traced back, autopsy protocols stating cancer diagnosis, and by notifications from regional health centres.

The collected items regarding cancer are primary site, histology, stage, basis for diagnosis, treatment modality and cancer status at death. Primary cancer sites have been coded according to the 8th revised edition of International Classification of Diseases (ICD-8) (28) since 1968. The data from the period 1961-1967 were recoded into the same revision in 1993. Histologic types have been coded according to the International Classification for Oncology (ICD-O) (29) since 1983; prior to this the WHO classification WHO/HS/CANC/24. I. (1956) was used. The extent of cancer at diagnosis is coded according to the TNM classification (when available). Otherwise the Registry has used its own codes since 1961. These codes determine the extent of disease as localized, regional, and distant. In stage determination all investigation methods including surgery are considered. In cases when the patient has not been previously

V Registru šifrirajo podatke posebej izurjene višje medicinske sestre pod nadzorom zdravnika. Kakovost podatkov se preverja med procesom šifriranja in tudi ob vnosu podatkov v računalnik. Računalniška obdelava poteka od januarja 1993 na računalniku Silicon Graphics IRIS 4D/310S z operacijskim sistemom Unix. Uporabljeno orodje za izdelavo programske opreme je Oracle.

Od leta 1990 dalje Register enkrat letno dopolnjuje podatke o vitalnem stanju bolnikov v Centralnem registru prebivalstva Slovenije.

Prva letna poročila o incidenci raka v Sloveniji so izšla v letih 1951 in 1953-1957. Podatki o incidenci raka za obdobje 1957-1971 so bili objavljeni v periodičnih publikacijah Svetovne zdravstvene organizacije. Redna letna poročila Incidenca raka v Sloveniji s podatki od leta 1965 izhajajo od leta 1968 (30). Leta 1992 je Register izdal Zemljevide incidence raka v Sloveniji (31). Poleg tega so podatke Registra v svojih delih citirali številni avtorji doma in po svetu. Podatki o incidenci raka v Sloveniji za obdobje 1956-1987 so objavljeni v vseh šestih zvezkih publikacije Rak na petih celinah, ki jo je sprva izdajala Mednarodna zveza za boj proti raku, od 1978 pa jo skupaj izdajata Mednarodna agencija za boj proti raku in Mednarodno združenje registrov raka (32-37).

## KAKOVOST PODATKOV IN POPOLNOST REGISTRACIJE

Kakovost podatkov Registra merita dva kazalca: odstotek primerov, ugotovljenih samo na osnovi zdravniških poročil o vzroku smrti, in odstotek histološko potrjenih primerov raka. Popolnost registracije ugotavljamo posredno z razmerjem med umrljivostjo za rakom in incidenco ter z ustaljenostjo incidence. Tabele 1-4 prikazujejo te kazalce v gradivu Registra v šestih opazovanih obdobjih od 1963-90.

Kakovost podatkov se je izboljševala z napredkom diagnostičnih postopkov v slovenskem zdravstvu, z izobraževanjem osebja Registra in z večjimi možnostmi računalniške kontrole.

Popolnost registracije se je izboljševala postopno. Osebe Registra je v ta namen preverjalo sezname bolnikov in njihovih odpustnih diagnoz v večjih slovenskih bolnišnicah. Največ pa so k rednemu in popolnejšemu prijavljanju pripomogli kliniki sami, ko so želeli zvedeti za preživetje svojih bolnikov. Register jih je k temu spodbujal s povratno informacijo v obliki rednih letnih poročil, s prispevki v slovenski zdravstveni literaturi, na strokovnih srečanjih in s podatki o preživetju bolnikov, ki so bili zdravljeni pri njih. Zdravniška poročila o vzroku smrti so eden od pomembnih dodatnih virov informacij že od leta 1950. Brez njih bi Register v letu 1991 izgubil podatke o 15% bolnikov. Registracija nemelanomskih kožnih rakov pa ni popolna, ker jih kirurške ambulate Registru ne prijavljajo redno. Prav tako nekatere bolnišnice redno ne prijavljajo multiplega mieloma in kronične limfocitne levkemije.

treated, the autopsy report is considered as well. In our analysis these last codes were used.

Data are coded by specially trained graduate nurses under a physician's supervision. Quality checks are done during the coding process and during the data input. Computer data processing has been performed since January 1993 on the Silicon-graphics Unix-server Iris 4D/310S with Oracle relational data base support.

Since 1990 each patient's vital status is checked annually at the Population Registry of the Republic of Slovenia using the unique personal identification number.

The first annual reports on cancer incidence in Slovenia were published in the Slovene language in the years 1951, and 1953-1957. The incidence data for the period 1957-1971 appeared in WHO periodicals. The incidence data from 1965 on have been published regularly in annual reports in Slovene and English (30). The Atlas on cancer incidence in Slovenia appeared in 1992 in Slovene (31). In addition, the Registry's data were cited in numerous papers in Slovenia and abroad and they were reported in all six volumes of the publication Cancer Incidence in Five Continents covering the time-period 1956-1987 (32-37).

## DATA QUALITY AND COMPLETENESS OF REGISTRATION

The data quality of a cancer registry is measured by two indicators: the percentage of cases for which registration was based on death certificates only, and the percentage of histologically verified cases; completeness of registration could be assessed by cancer incidence/mortality ratio and by the stability of incidence rates. The trends of these indicators during the study period 1963-90 in the material of the Registry are shown in Tables 1 - 4.

Data quality has been gradually improving during the study period along with advanced diagnostic procedures in Slovenia, education of the Registry staff and greater possibilities for computerised internal consistency checks.

Completeness of registration has also been gradually improved by checking the hospital-discharge lists and by promoting clinicians' interest for regular reporting through release of permanent feed-back information in the Slovene Medical Journal, regular annual reports and presentations at different workshops. Death certificates have provided one of the data sources since 1950. In 1991, for example the Registry would have lost 15% of the cases if death certificates had not been an additional source of information and if they had not been traced back. However, the registration of non-melanoma skin cancer was certainly not complete, due to underreporting of surgically treated patients in surgical out-patient-departments throughout Slovenia, and the registration of multiple myeloma and chronic lymphatic leukemia was also not complete.

**TABELA 1.** Število vseh novih primerov raka in odstotek registriranih samo na osnovi zdravniških poročil o vzroku smrti po spolu in obdobju opazovanja. Slovenija 1963-90.

**TABLE 1.** Total number of new cancer cases and percentage registered from death certificates only by sex and period of observation. Slovenia 1963-90.

Obdobje Period	Št. novih primerov No. of new cases			% registriranih samo na osnovi zdravniških poročil o vzroku smrti % of cases registered from death certificates only		
	Moški Males	Ženske Females	Vsi All	Moški Males	Ženske Females	Vsi All
1963-67	8772	9055	17827	11	10	11
1968-72	10048	9912	19960	10	8	9
1973-77	11665	11428	23093	5	4	5
1978-82	13225	12420	25655	4	4	4
1983-87	14439	13678	28117	3	3	3
1988-90	9598	9073	18671	4	4	4

**TABELA 3.** Število umrlih zaradi raka, število novih primerov raka ter količnik umrljivosti in incidence po obdobjih opazovanja. Slovenija 1963-90.

**TABLE 3.** Total number of deaths from cancer, number of new cancer cases and the mortality/incidence ratio. Slovenia 1963-90.

Obdobje Period	Št. umrlih No. of deaths	Št. novih primerov No. of new cases	Umrlijivost/incidenca Mortality/incidence
1963-67	12044	17827	0.67
1968-72	13710	19960	0.69
1973-77	15939	23093	0.69
1978-82	17537	25655	0.68
1983-87	19283	28117	0.68
1988-90	12220	18671	0.65

**IZBOR BOLNIKOV**

Populacijski register raka mora omejiti analizo preživetja na bolnike iz območja, ki ga kot register pokriva. Bolniki, ki prihajajo na zdravljenje od drugod, so neznačilna podskupina bolnikov z drugačnim pričakovanim trajanjem življenja.

Tako smo v analizo vključili samo bolnike s stalnim prebivališčem v Republiki Sloveniji, pri katerih je bil rak ugotovljen v obdobju 1963-90. Zaradi uporabljenega metodološkega pristopa smo bolnike, ki so bili izgubljeni iz opazovanja, vključili v analizo. Upoštevali smo tudi bolnike, ki so zboleli za več kot enim primarnim rakom. Število in odstotek teh bolnikov sta prikazana v tabeli 5. Njihovo število je s časom naraščalo, kar je posledica izboljšanih diagnostičnih možnosti, daljšega preživetja bolnikov kakor tudi popolnejše registracije.

Izključili pa smo bolnike, pri katerih rak ni bil ugotovljen za časa življenja. To so bolniki, ki so bili registrirani samo na osnovi zdravniških poročil o vzroku smrti ali je bil pri njih rak ugotovljen po smrti pri obdukciji.

Podatke smo obdelali za vsako od 29. izbranih primarnih lokacij in za vse lokacije raka skupaj.

**TABELA 2.** Število vseh novih primerov raka\* in odstotek mikroskopsko potrjenih po spolu in obdobjih opazovanja. Slovenija 1963-90.

**TABLE 2.** Total number of new cancer cases\* and percentage of microscopically confirmed cases by sex and period of observation.

Obdobje Period	Število Number			Odstotek Percentage		
	Moški Males	Ženske Females	Vsi All	Moški Males	Ženske Females	Vsi All
1963-67	7806	8112	15918	66	78	73
1968-72	9042	9074	18116	76	84	80
1973-77	11046	10908	21954	83	87	85
1978-82	12751	11903	24654	87	90	88
1983-87	13979	13226	27205	89	90	89
1988-90	9224	8705	17929	91	91	91

\* Primeri, registrirani samo na osnovi zdravniških poročil o vzroku smrti, so izključeni.

\* Cases, registered from death certificates only are excluded.

**TABELA 4.** Število novih primerov raka, navedeno v letnih poročilih, in število ter odstotek naknadno prijavljenih po stanju z dne 22. 12. 1994 po obdobjih opazovanja.

**TABLE 4.** Number of new cancer cases, as cited in annual reports, and number and percentage of cases registered subsequently as on December 22, 1994 by periods of observation.

Obdobje Period	Letna poročila Annual reports	Naknadno prijavljeni Subsequently registered	Odstotek Percentage
	Število Number	Število Number	
1963-67	10956	162	1.5
1968-72	19459	501	2.5
1973-77	22355	738	3.2
1978-82	24770	885	3.4
1983-87	27316	801	2.9
1988-90	18399	272	1.5

**PATIENTS SELECTION**

A population-based registry should confine the analysis of survival to residents of the registry area, since patients migrating into the area for treatment only will probably be an atypical subgroup with rather different survival expectations.

Thus, only cancer patients, residents of Slovenia, diagnosed in the time-period 1963-90 were included in the study. The lost to follow-up patients were included, as were the patients with more than one primary cancer site. Registrations of more than one primary cancer in the same individual increased over the study period (Table 5). The increasing proportion of such patients is due to improvements in diagnosis, survival and registration practice.

Cases registered from death certificates only were excluded, as well as cases diagnosed at autopsy.

The 29 most frequent primary sites and all cancer sites together were analysed.

The age groups studied were: 0-14, 15-44, 45-54, 55-64, 65-74, and 75+. For children aged 0-14 years - due to the small number of cases - only the data for acute leukemias is presented and commented upon.

Bolnike smo razdelili v starostne skupine: 0-14 let, 15-44 let, 45-54 let, 55-64 let, 65-74 let, 75 in več let. Ker je bilo pri otrocih, starih 0-14 let, število bolnikov majhno, smo posebej obravnavali le otroke z akutno levkemijo.

Obdelavo podatkov smo razslojili na pet petletnih obdobj (1963-1967, 1968-1972, 1973-1977, 1978-1982, 1983-1987) in zadnje triletno obdobje (1988-1990). Vitalno stanje bolnikov smo spremljali do 31.12.1993; bolnike iz zadnjega petletnega obdobja smo tako spremljali vsaj šest let.

**TABELA 5. Število vseh in število ter odstotek drugih oz. tretjih primarnih rakov po obdobjih opazovanja, Slovenija 1963-90.**

**TABLE 5. Total number of new cancer cases and number and percentage of second and third primary cancers by periods of observation, Slovenia 1963-90.**

Obdobje Period	Dva primarna raka Two primary cancers		Trije primarni raki Three primary cancers		
	Število Number	Število Number	%	Število Number	%
1963-67	17827	315	1.8	11	0.1
1968-72	19960	532	2.7	30	0.2
1973-77	23093	866	3.8	31	0.1
1978-82	25655	1322	5.2	62	0.2
1983-88	28117	1696	6.0	88	0.3

## SPREMLJANJE BOLNIKOV

Redno letno spremljanje rakavih bolnikov poteka od leta 1950. Do leta 1990 je Register pošiljal zdravstvenim domovom ali občinskim matičnim uradom posebne poizvedbe, če ni bil kako drugače (s prijavnico raka ali z zdravniškim poročilom o vzroku smrti) obveščen o vitalnem stanju bolnika. V letu 1988 je vzpostavil povezavo s Centralnim registrom prebivalstva Slovenije (CRP), da bi si zagotovil EMSO in podatke o vitalnem stanju do tedaj registriranih bolnikov. V sedanji obliki je bil CRP Slovenije ustanovljen leta 1980. Nastal je na osnovi podatkov predhodnega registra, ki je temeljil na jugoslovanski zakonodaji iz leta 1976. Na pobudo Slovenije so leta 1976 vsakemu državljanu nekdanje Jugoslavije predpisali 13-mestno EMŠO (38).

Leta 1990 je bila podatkovna baza Registra dopolnjena z manjkajočimi EMSO. Od tedaj se Register enkrat letno povezuje s CRP, tako da se za vse registrirane bolnike v podatkovno bazo Registra avtomatsko dodajo podatki o smrti ali o tem, da je bolnik "izgubljen iz opazovanja", npr. zaradi odselitve v drugo državo. V tem procesu Register dosledno spoštuje določila Zakona o varstvu osebnih podatkov. Računalniška povezava in obnavljanje informacij o vitalnem stanju registriranih bolnikov sta zmanjšala odstotek bolnikov, izgubljenih iz opazovanja, in možnost dvojne registracije istega bolnika.

Tabela 6 prikazuje vitalno stanje vseh v analizo vključenih bolnikov pet let po ugotovitvi raka glede na opazovano obdobje. Delež izgubljenih iz opazovanja je majhen.

The analyses were stratified into five five-year periods: 1963-67, 1968-72, 1973-77, 1978-82, 1983-87 and a shorter three-year period 1988-90. Patients were followed till December 31, 1993 so that also patients diagnosed in the period 1983-87 were followed up for at least six years.

## FOLLOW-UP OF PATIENTS

The follow-up of registered cancer patients has been performed annually since 1950. Until the year 1990 special inquiries were submitted to regional health centres and/or local authorities if the Registry had not already been passively informed (through notifications or death certificates) about the vital and health status of the patient. In the year 1988 a linkage between the Registry and the Central Population Registry was established in order to provide the cancer patients' unique personal identification numbers and information on their vital status. In its recent form the Central Population Registry for Slovenia was established in 1980. It was created on the basis of the data from a former registry which was based on the Regulations of the former Yugoslavia from 1976. At the initiative of Slovenia in 1976, a uniform 13-digit personal identification number was created for all citizens of the former Yugoslavia (38).

In 1990 the Registry's data base was updated with the personal identification numbers, and from this year on, all registered patients are linked automatically once a year; death, as well as lost to follow-up events (e.g. emigration) are automatically added to the matricular part of the Registry's data base. During the linkage procedures, data protection laws are strictly respected.

The computer linkage and updating of the vital status of all registered patients has markedly reduced the percentage of lost to follow-up patients and also the possibility of a duplicate registration of the same person.

Table 6 shows the vital status of all patients included in this analysis five years after diagnosis by observation periods. The number of lost to follow-up patients is small.

**TABELA 6. Vitalno stanje v analizo vključenih bolnikov 5 let po diagnozi po spolu in obdobju opazovanja. Slovenija 1963-90.**

Obdobje Period	Moški Males							
	Vsi All	Živi Alive	%	Umrli Dead	%	Izgubljeni Lost to follow-up	%	
1963-67	7609	1499	19.7	6058	79.6	52	0.7	
1968-72	8673	1700	19.6	6889	79.4	84	0.9	
1973-77	10572	2189	20.7	8231	77.9	152	1.4	
1978-82	12223	2728	22.3	9326	76.3	169	1.4	
1983-87	13438	3089	23.0	10245	76.2	104	0.8	

**TABLE 6. Vital status of in the analysis included patients 5 years since diagnosis of cancer by sex and period of observation, Slovenia 1963-90.**

Obdobje Period	Ženske Females							
	Vsi All	Živi Alive	%	Umrli Dead	%	Izgubljeni Lost to follow-up	%	
1963-67	7978	2928	36.7	5010	62.8	40	0.5	
1968-72	8853	3221	36.4	5533	62.5	99	1.1	
1973-77	10575	3976	37.6	6447	61.0	152	1.4	
1978-82	11537	4589	39.8	6820	59.1	128	1.1	
1983-87	12865	5065	39.3	7710	60.0	90	0.7	

**METODE**

Preživetje ocenjujemo z odstotkom bolnikov, ki so po izbranem časovnem obdobju od ugotovitve diagnoze še živi. Dolžino obdobja izberemo glede na to, kakšna je prognoza opazovane bolezni. Preživetje bolnikov z rakom običajno opazujemo po enem, treh, petih in desetih letih po diagnozi. Populacijski registri izračunavajo opazovane in relativne odstotke preživetja (39).

Opazovani odstotek preživetja upošteva vse smrti, neglede na vzrok, in je odraz dejanske umrljivosti v opazovani skupini bolnikov. Posamezne skupine bolnikov se po vzrokih smrti med seboj razlikujejo. Ti so odvisni od bolnikovega spola, starosti in socialno-ekonomskega položaja.

Relativni odstotek preživetja je količnik med opazovanim in pričakovanim odstotkom preživetja. Pričakovani odstotek preživetja pove, kako dolgo bi opazovani bolniki preživeli, če ne bi zboleli za rakom. Izračunamo ga s pomočjo tablic umrljivosti in znane starostne porazdelitve opazovanih bolnikov. Pričakovani odstotek preživetja smo v naši raziskavi izračunali iz tablic umrljivosti za Slovenijo (40).

Za analizo opazovanega, pričakovanega in relativnega preživetja smo uporabili računalniški program Hakulinena in sodelavcev (41-44). Program temelji na aktualni metodi ali metodi življenjskih tablic, ki so jo v 50. letih opisali Berkson in Gage (45) ter Cutler in Ederer (3). Ta metoda upošteva vse podatke o bolnikih do zaključka opazovanja. Za bolnike, ki jih opazujemo krajši čas, kot je izbrana dolžina obdobja, ali pajih izgubimo iz opazovanja po nekem znanem datumu predpostavljamo, da so bili izpostavljeni verjetnosti smrti le polovico leta, v katerem smo jih prenehali opazovati (39).

**METHODOLOGY**

Survival rates are based on proportions of patients alive at various times after diagnosis. Usually we are interested in rates at fixed intervals of time after diagnosis, e.g. one, two, three, five and ten years.

For survival analysis of population-based data, standard statistical methods exist for the calculation of observed survival rates and relative survival rates (39).

The observed survival rate accounts for all deaths, regardless of cause, and is a true reflection of total mortality in the patient group. The causes of death other than the cancer of interest might differ between groups. They depend on age, sex and socioeconomic status.

The relative survival rate is the ratio of the observed survival rate for the patient group to the expected survival rate for people in the general population similar to the patient group with respect to age, sex, and the calendar year of observation. Thus the relative survival rate is obtained by adjustment of observed survival for the normal life expectancy of the general population of the same age, and it estimates the chance of survival from the effects of cancer (3). In our analysis expected survival rates were calculated from the Slovenian life tables elaborated at the Statistical Office of the Republic of Slovenia (40).

The computer package of Hakulinena and coworkers (41-44) was applied. This package is based on the actuarial, or life table method, which was described by Berkson and Gage (45) and Cutler and Ederer (3). This method provides a means for using all the follow-up information accumulated up to the closing date of the observation period. Patients are said to be censored if the last date of follow-up occurs before the maximum duration of follow-up is attained or if they become lost to follow-up after a known date. These patients are assumed to have been observed, on the average, for one-half of the year during which they were withdrawn (39).

## NAČIN PREDSTAVITVE PODATKOV

Preživetje bolnikov z rakom v Sloveniji opisujemo in o njem razpravljamo v enajstih poglavjih. V posamezno poglavje so zajeti bolniki s tistimi raki, ki jih obravnavajo izbrane skupine specialistov. Znotraj poglavja je preživetje opisano glede na organ, ki ga je rak prizadel, npr. grlo, žrelo, ustna votlina. V zadnjem, enajstem poglavju opisujemo preživetje za vse bolnike z rakom vključno s tistimi, ki zaradi redkega pojavljanja, niso posebej obravnavani.

Zaradi lažjega razumevanja pojma relativnega preživetja je v vsakem poglavju za vsak obravnavan rak posebej na sliki 1 prikazano dejansko opazovano in pričakovano preživetje za bolnike obeh spolov skupaj za obdobje 1983-87. Pričakovano je tisto preživetje, ki bi ga za te bolnike pričakovali glede na njihovo starost in spol v primeru, če ne bi zboleli za rakom. Tej uvodni sliki sledita dve tabeli. Prva kaže starostno porazdelitev v analizo vključenih bolnikov po spolu in obdobju opazovanja, druga pa razširitev bolezni v času diagnoze.

Na sliki 2 so s stolpci in 95% intervali zaupanja prikazani odstotki eno-, tri-, pet- in desetletnega preživetja bolnikov v šestih zaporednih časovnih obdobjih 1963-90. Pri rakah, kjer en spol le redkokdaj zboleva, npr. moški za rakom dojke, so slikovno prikazani le podatki za spol z dovolj velikim številom primerov. V tabeli 3 so navedeni vsi odstotki eno-, tri-, pet- in desetletnega opazovanega in relativnega preživetja po obdobjih.

Slika 3 prikazuje relativno desetletno preživetje po starostnih skupinah za desetletno obdobje 1978-87. V tem prikazu so izpuščene starostne skupine z manj kot 10 primeri. Pri posameznih lokacijah se pri najstarejših skupinah krivulja relativnega preživetja po večjih letih opazovanja obrne navzgor. To si razlagamo s tem, da so preživeli bolniki imeli boljše preživetje, kot bi ga glede na njihovo starost pričakovali. V nekem smislu so bili izbrana skupina prebivalcev, ki je bila zaradi svoje osnovne bolezni v večji meri zdravstveno nadzorovana kot enako stara splošna populacija (42).

Naštetim podatkom sledi razpravljanje specialistov, klinikov o tistih spremembah v diagnostiki in zdravljenju v obravnavanem obdobju, ki so lahko vplivale na preživetje bolnikov z rakom. Slika 4 kaže primerjavo eno- in petletnega relativnega preživetja bolnikov v Sloveniji s podatki relativnega preživetja bolnikov na Škotskem in na Danskem v letih 1963-87 po enakih obdobjih za vse tiste rake, ki so bili v treh deželah opredeljeni na enak način (13,15).

## DATA PRESENTATION

The trends in cancer patients' survival in Slovenia are described and discussed in eleven chapters. Each individual chapter is dedicated to patients with those cancers treated by selected groups of specialists. Within each chapter, the survival is presented with respect to the organ affected (by cancer), e.g. larynx, pharynx, oral cavity. In the last chapter, survival for all cancer patients, including those with rare cancers, is presented.

For better understanding of the concept of relative survival, and for providing a global impression of the problems related to individual cancers, figure 1 in each chapter presents the observed survival for patients of both sexes together, and their expected survivals in the time-period 1983-87. The latter is the survival that could be expected in those patients with respect to their age and sex had they not been affected by cancer. This introductory outline is followed by two tables: the first shows the age distribution of (the analysed) patients by sex and observation period, while the other shows the extent of disease at diagnosis.

In figure 2 one-, three- and five-year survival rates of patients in six sequential time-periods of observation 1963-90 are presented by bars and 95% confidence intervals. In cancers normally affecting only one sex, and rarely the other (e.g. breast cancer in males), only the data for the sex with a sufficiently large number of cases are presented. Table 3 shows all the percentages for one-, three-, five- and ten-year observed and relative survival rates by time periods.

The following Figure 3 shows relative 10-year survival by age groups for the 1978-87 ten-year period. In this presentation the age groups with fewer than 10 cases have been left out. In some cancer sites the relative survival curves for the oldest age-groups turn up after several years of observation. This could be explained by the fact that these patients survived better than expected regarding their age. Cancer patients are due to their disease, a selected group of population having access to a better health control and care (42).

The listed data are then discussed by clinicians in terms of those changes occurring in the diagnosis and treatment during the appointed periods, which might have influenced the patients' survival. The discussions are followed by Figure 4, comparing one- and five-year relative survivals of cancer patients diagnosed in 1963-87 in Slovenia with the relative survival data for cancer patients in Scotland and Denmark for all comparable cancer sites (13,15).

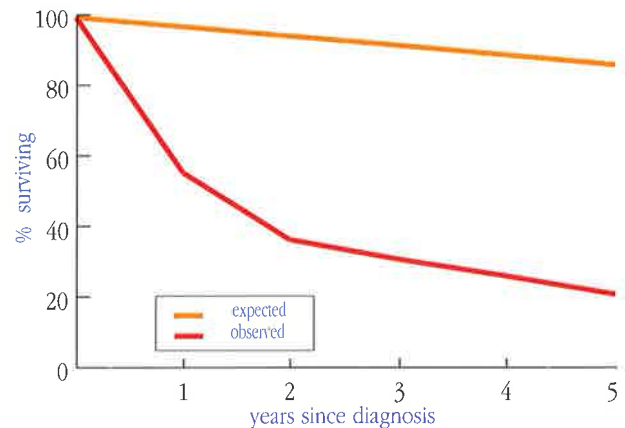


IZSLEDKI IN RAZPRAVA  
RESULTS AND DISCUSSION

# USTNA VOTLINA

## ORAL CAVITY

MKB 8 / ICD 8 : 1411-1419, 143, 144, 145



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z rakom ustne votline, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of oral cavity cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom ustne votline 1510 moških in 189 žensk. Pri 34 bolnikih (2%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka ustne votline naraščala; porast je bil strm v 70. in v prvi polovici 80. let (30, 46). V letih 1963-67 je bila groba incidenčna mera 3,5/100.000 moških in 0,7/100.000 žensk, v letih 1988-90 pa 7,8/100.000 moških in 1/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 94% v letih 1963-67 na 98% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1).

Odstotek bolnikov v starosti 45-64 let se je povečal. Razširitev bolezni pred zdravljenjem se skorajda ni spremenila, le v zadnjem obdobju je bil odstotek bolnikov z lokalizirano boleznijo večji (tabela 2).

In the period 1963-90 a total of 1510 male and 189 female patients with tongue and mouth cancer were diagnosed in Slovenia. In 34 patients (2%) cancer was diagnosed at death and they are not included in the analysis.

In the observed 28-year time-period the incidence of this cancer increased (30,46). The increase was steeper in the 70's and the first half of 80's. In 1963-67 the crude incidence rate was 3.5/100,000 males and 0.7/100,000 females; in 1988-90 it was 7.8/100,000 males and 1/100,000 females. The percentage of microscopically confirmed cases was 90% in 1963-67, 94% in 1968-72 and 98% in 1988-90. The age distribution changed (Table 1).

The percentage in age-group 45-64 increased. The stage distribution indicated an improvement in the last period (Table 2).

**TABELA 1:** Ustna votlina. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

**TABLE 1:** Oral cavity. Patients included in the analysis by sex, age and period of observation.

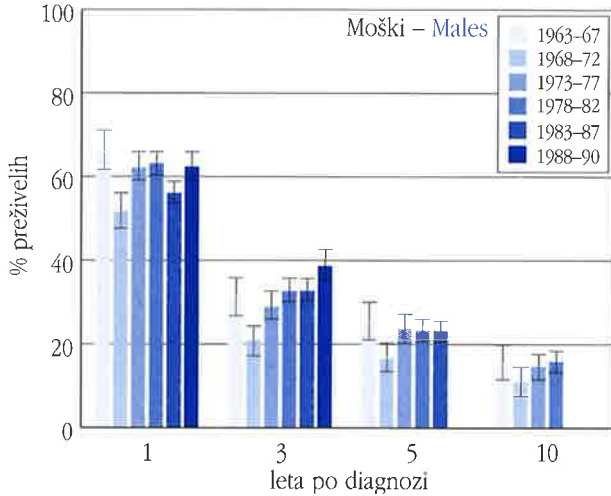
Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
Males	1963-67	130	0.0	10.8	17.7	35.4	28.5	7.7
	1968-72	163	0.0	14.1	13.5	38.7	25.8	8.0
	1973-77	227	0.0	11.0	30.4	25.6	22.5	10.6
	1978-82	338	0.3	10.7	31.7	29.6	22.5	5.3
	1983-87	397	0.3	7.8	29.7	38.0	18.1	6.0
	1988-90	221	0.0	9.5	29.4	45.7	12.2	3.2
	1963-90	1476	0.1	10.2	27.4	35.2	20.7	6.5
Females	1963-67	28	0.0	14.3	14.3	42.9	21.4	7.1
	1968-72	21	0.0	9.5	9.5	23.8	23.8	33.3
	1973-77	19	0.0	5.3	21.1	26.3	42.1	5.3
	1978-82	43	0.0	11.6	23.3	23.3	23.3	18.6
	1983-87	49	0.0	12.2	14.3	38.8	16.3	18.4
	1988-90	29	0.0	3.4	20.7	31.0	20.7	24.1
	1963-90	189	0.0	10.1	17.5	31.7	22.8	18.0

**TABELA 2:** Ustna votlina. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

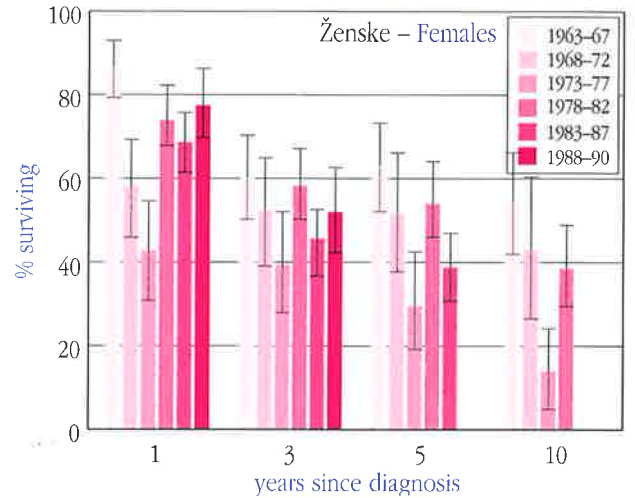
**TABLE 2:** Oral cavity. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)				
		Localized	Regional	Distant	Unknown	
Males	1963-67	130	-	-	-	-
	1968-72	163	28.8	58.9	9.8	2.5
	1973-77	227	32.6	52.4	14.1	0.9
	1978-82	338	21.3	62.1	16.3	0.3
	1983-87	397	23.2	65.0	10.3	1.5
	1988-90	221	30.3	52.5	16.3	0.9
	1963-90	1476	26.2	59.4	13.4	1.1
Females	1963-67	28	-	-	-	-
	1968-72	21	71.4	19.0	4.8	4.8
	1973-77	19	36.8	47.4	15.8	0.0
	1978-82	43	37.2	48.8	9.3	4.7
	1983-87	49	44.9	44.9	6.1	4.1
	1988-90	29	31.0	58.6	6.9	3.4
	1963-90	189	42.9	45.3	8.1	3.7

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom ustne votline zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with oral cavity cancer diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Ustna votlina. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Oral cavity. Observed and relative survival by sex and period of observation.

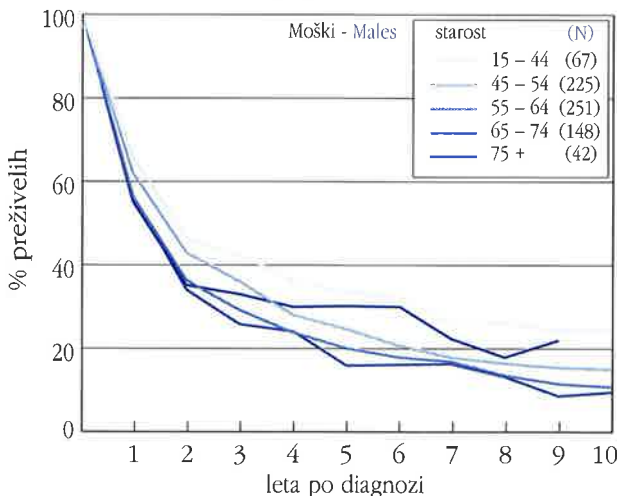
Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	63.85	28.18	21.02	9.70	85.71	57.14	57.14	42.86	66.00	31.38	25.52	15.26	87.10	60.26	62.96	54.54
1968-72	49.85	18.69	13.58	7.12	56.10	45.90	40.80	25.50	51.69	20.96	16.58	11.02	58.46	52.48	51.77	43.20
1973-77	60.00	25.97	19.70	9.85	42.11	36.84	26.32	10.53	62.07	28.84	23.60	14.57	43.01	39.47	29.77	14.13
1978-82	61.48	30.00	19.90	11.29	72.09	53.49	46.51	27.91	63.16	32.66	23.09	15.79	74.21	58.49	54.24	38.73
1983-87	54.60	30.08	19.97		66.67	41.67	33.33		56.05	32.67	23.07		68.95	45.82	39.00	
1988-90	61.09	36.20			75.86	48.28			62.35	38.64			77.79	52.26		

Pri moških se je odstotek relativnega triletnega preživetja povečeval po obdobju 1968-72, odstotek petletnega je ostal nespremenjen od leta 1973 dalje (slika 2, tabela 3). Boljše preživetje v letih 1963-67 je posledica večjega števila iz obdelave izključenih bolnikov, ker jih je bilo več registriranih samo na osnovi zdravniških poročil o vzroku smrti.

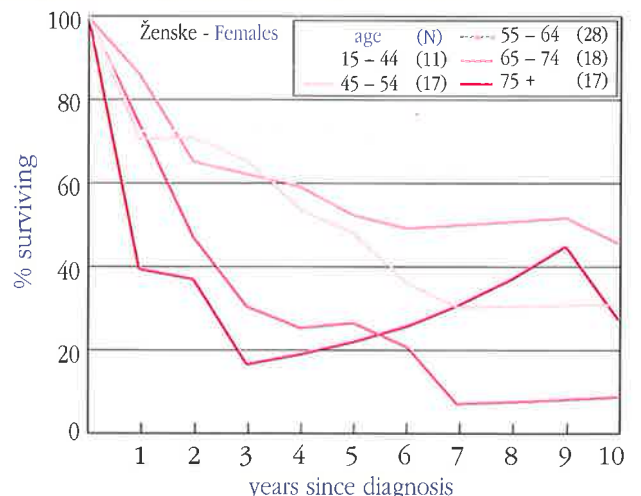
Odstotek petletnega preživetja je bil pri mlajših bolnikih do 44. leta starosti večji kot pri starejših (slika 3).

In males an increase in relative three-year survival rate was observed in the period 1988-90, while the five-year survival rate remained stable (Figure 2, Table 3). The higher survival rates for the period 1963-67 are due to a higher percentage of patients for whom the registration was based on death certificate only, and they were thus excluded from the analysis. In relation to age at diagnosis, male patients aged 15-44 years survived better than others (Figure 3).

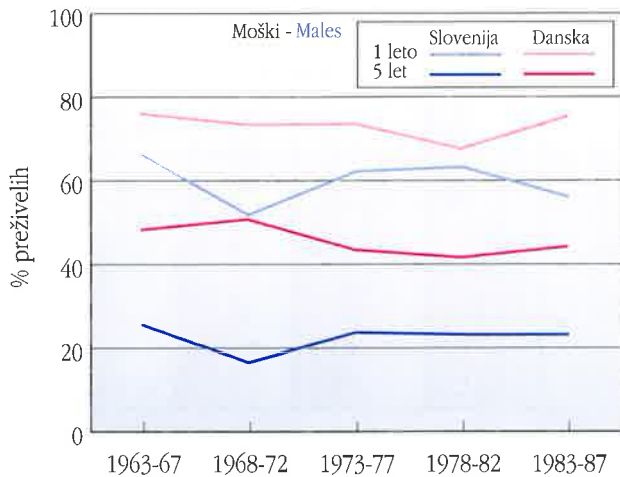
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom ustne votline zbolelih v letih 1978 – 87 po spolu in starosti.



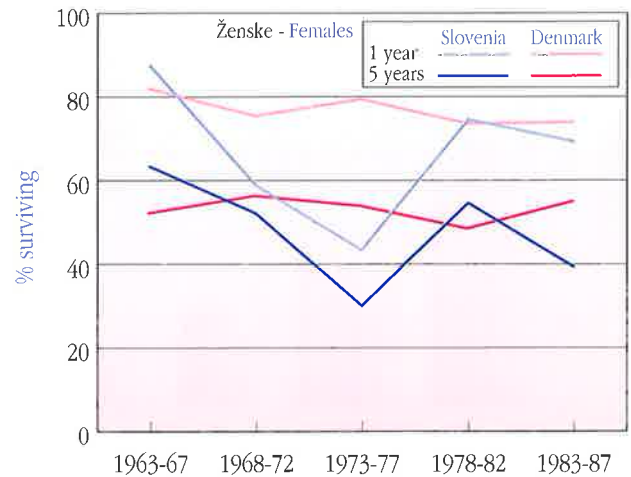
**FIGURE 3:** Relative ten-year survival of oral cavity cancer patients diagnosed in the period 1978 – 87 by sex and age.



**SLIKA 4:** Eno- in petletno relativno preživetje bolnikov z rakom v ustni votlini, zbolelih v letih 1963-87, v Sloveniji in na Danskem po spolu in obdobjih opazovanja



**FIGURE 4:** One- and five-year relative survival rates of oral cavity cancer patients, diagnosed in 1963-87 in Slovenia and Denmark, by sex and period of observation



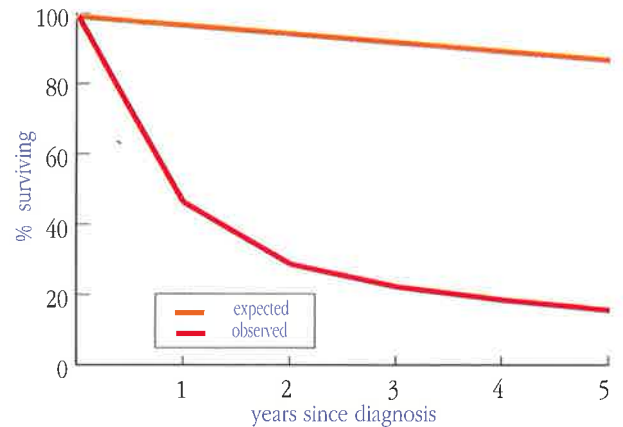
Ker je bila le pri eni četrtini bolnikov bolezen odkrita kot lokalizirana, je jasno, da moramo v bodočnosti izboljšati zgodnje odkrivanje. Kljub vsemu pa se je odstotek triletnega preživetja bolnikov povečal. To si lahko razlagamo s sistematičnim pristopom k zdravljenju lokoregionalne bolezni v zadnjih štirih obdobjih opazovanja. Od leta 1973 so vsi bolniki, sprejeti na Onkološki inštitut ali Kliniko za otorinolaringologijo in maksilofacialno kirurgijo v Ljubljani, predstavljeni multidisciplinarni skupini specialistov, ki odloči o načinu zdravljenja posameznega bolnika. Istočasno smo uvedli pooperativno obsevanje pri nižjih stadijih bolezni in intraoperativno kontrolo kirurških robov. Napredovalo bolezen zdravimo s polikemoterapijo (47). V zadnjem času je rekonstrukcija spodnje čeljusti s prostim osteokutanim režnjem omogočila boljšo funkcijo in boljši kozmetični učinek.

Since only one quarter of the patients were diagnosed in the localised stage, it is obvious that the detection was inadequate and should be improved in the future. However, the 3-year survival increased. This reflects a more systematic approach to locoregional treatment in the second two thirds of the observed period. Since 1973, all patients admitted to the Institute of Oncology and University department of otorhinolaryngology and cervicofacial surgery in Ljubljana have been regularly presented to the multidisciplinary team, where the management of the patient's disease is supervised by a team of various specialists. At the same time, there has been a tendency toward routine use of surgery as primary treatment in lower stages of the disease, combined with post-operative irradiation when indicated. Strict intraoperative histopathologic control of surgical margins was introduced. In the last period, the reconstruction of the mandible with free osteocutaneous flaps resulted in improved cosmetic effects as well as in function. In advanced cases, multidrug chemotherapy was successfully attempted (47).

# ŽRELO

## PHARYNX

MKB 8 / ICD 8: 1410, 146, 148



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z rakom žrela, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of pharyngeal cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom žrela 2252 moških in 233 žensk. Pri 29 bolnikih (1%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka žrela strmo naraščala (30,46). V letih 1963-67 je bila groba incidenčna mera 3,8/100.000 moških in 0,8/100.000 žensk, v letih 1988-90 pa 13,6/100.000 moških in 1/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal z 90% v letih 1963-67 na 99% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se ni spreminjala (tabela 1). Največ bolnikov je bilo v starostni skupini 45-54 let. Tudi ocena razširitve bolezni pred zdravljenjem se skorajda ni spremenila (tabela 2).

In the period 1963-90 a total of 2252 male and 233 female patients with pharyngeal cancer ( ICD 8: 1410, 146, 148) were diagnosed in Slovenia. In 29 patients (1%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence increased steeply in males, and moderately in females (30,46). In 1963-67 it was 3.8/100,000 males and 0.8/100,000 females, while in 1988-90 it was 13.6/100,000 males and 1/100,000 females. The percentage of microscopically confirmed cases increased from 90% in 1963-67 to 99% in 1988-90. The age distribution was fairly stable, with a peak in the age group 45-54, and so was the extent of disease at diagnosis (Table 1, Table 2).

TABELA 1: Žrelo. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Pharynx. Patients included in the analysis by sex, age and period of observation.

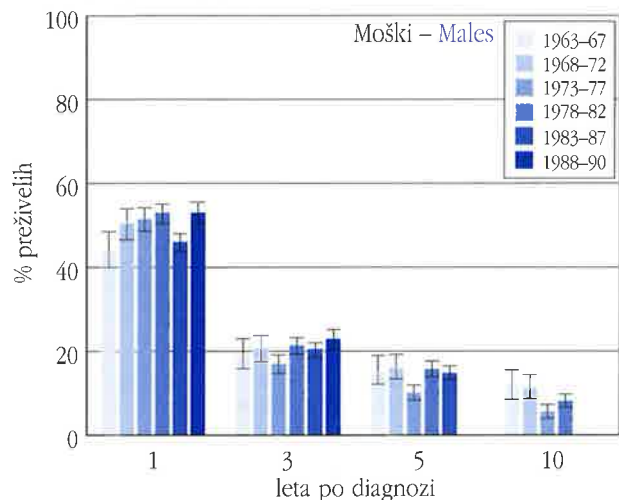
Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
Males	1963-67	158	0.0	7.0	12.7	36.7	34.8	8.9
	1968-72	209	0.5	10.5	16.3	41.1	24.9	6.7
	1973-77	351	0.0	8.0	28.5	31.6	25.6	6.3
	1978-82	506	0.2	8.5	36.2	29.6	20.2	5.3
	1983-87	610	0.0	7.5	35.6	37.4	14.8	4.8
	1988-90	396	0.0	10.4	29.3	38.1	13.9	8.3
	1963-90	2230	0.1	8.6	30.0	35.2	19.9	6.2
Females	1963-67	32	0.0	6.3	21.9	21.9	28.1	21.9
	1968-72	26	3.8	15.4	15.4	15.4	38.5	11.5
	1973-77	27	0.0	7.4	18.5	22.2	25.9	25.9
	1978-82	47	2.1	2.1	14.9	29.8	25.5	25.5
	1983-87	60	1.7	3.3	18.3	35.0	16.7	25.0
	1988-90	34	0.0	2.9	20.6	29.4	26.5	20.6
	1963-90	226	1.3	5.3	18.1	27.4	25.2	22.6

TABELA 2: Žrelo. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

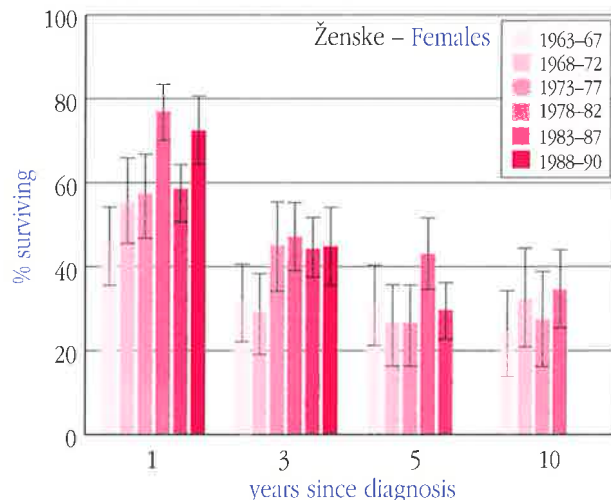
TABLE 2: Pharynx. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)				
		Localized	Regional	Distant	Unknown	
Males	1963-67	158	-	-	-	-
	1968-72	209	18.2	67.9	12.9	1.0
	1973-77	351	11.4	67.8	20.2	0.6
	1978-82	506	7.9	67.6	23.5	1.0
	1983-87	610	9.3	69.7	19.7	1.3
	1988-90	396	11.6	70.2	16.2	2.0
	1963-90	2230	10.7	68.8	19.4	1.2
Females	1963-67	32	-	-	-	-
	1968-72	26	19.2	69.2	7.7	3.8
	1973-77	27	11.1	66.7	18.5	3.7
	1978-82	47	14.9	57.4	25.5	2.1
	1983-87	60	13.3	66.7	16.7	3.3
	1988-90	34	23.5	52.9	23.5	0.0
	1963-90	226	16.1	62.7	19.2	2.6

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom žrela zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with pharyngeal cancer diagnosed in the period 1963 – 90 by sex and period of observation.



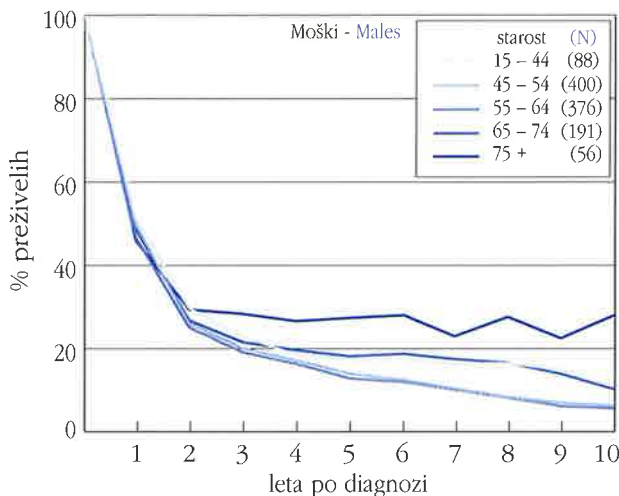
**TABELA 3:** Žrelo. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Pharynx. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	41.85	16.74	12.23	7.08	43.75	28.13	25.00	15.63	43.54	18.98	15.28	11.81	45.62	31.90	30.92	24.33
1968-72	48.20	18.32	13.01	7.23	53.85	26.92	23.08	23.08	49.91	20.47	15.80	11.13	55.30	29.27	26.74	32.20
1973-77	49.28	15.19	8.31	3.73	55.56	40.74	22.22	18.52	50.91	16.81	9.91	5.50	57.40	45.13	26.53	27.46
1978-82	51.09	19.47	13.45	5.82	74.47	42.55	36.17	23.40	52.45	21.15	15.54	8.06	77.03	47.15	43.07	34.56
1983-87	44.48	18.83	12.83		56.67	40.00	25.00		45.58	20.33	14.66		58.61	44.28	29.69	
1988-90	51.20	21.00			70.59	41.18			52.48	22.71			72.53	44.84		

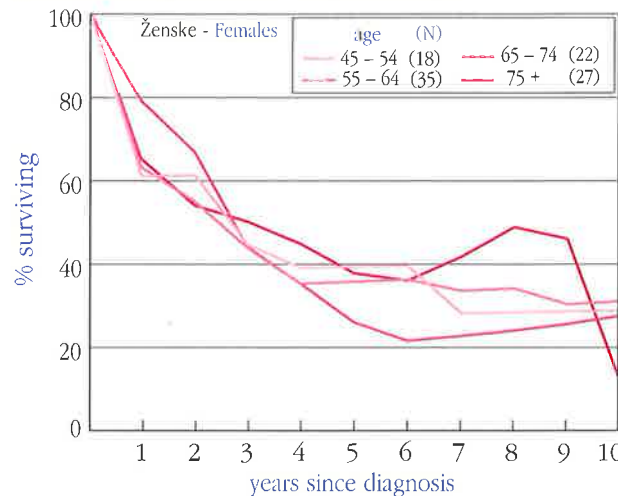
Odstotek relativnega enoletnega preživetja se je povečeval do vključno 1978-82, tudi odstotek triletnega preživetja se je nakazano povečal, odstotek petletnega preživetja pa je bil ustaljen (slika 2, tabela 3). Preživetje bolnikov ni bilo povezano s starostjo. Največji odstotki petletnega preživetja so bili pri najstarejši starostni skupini (slika 3).

The relative one-year survival rate of male pharyngeal cancer patients increased until 1978-82. The three year survival rates tended to increase, while the five year rates remained fairly stable (Figure 2, Table 3). In relation to age there was no correlation, the eldest age group had the highest survival rates (Figure 3).

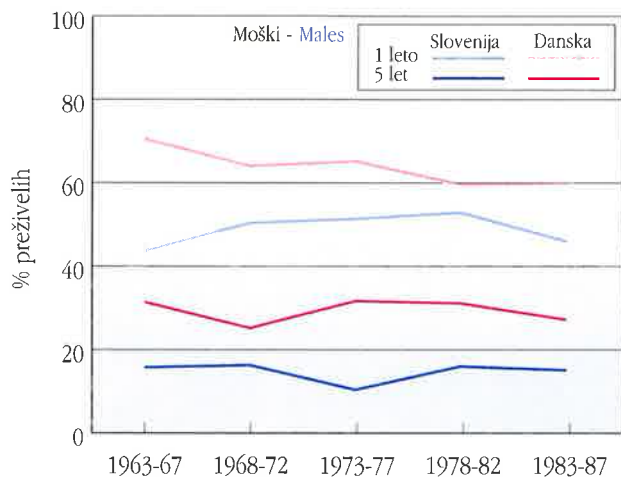
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom žrela zbolelih v letih 1978 – 87 po spolu in starosti.



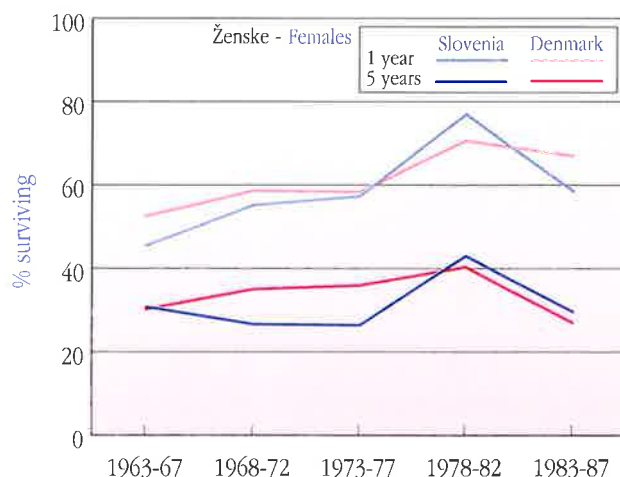
**FIGURE 3:** Relative ten-year survival of pharyngeal cancer patients diagnosed in the period 1978 – 87 by sex and age.



**SLIKA 4:** Eno- in petletno relativno preživetje bolnikov z rakom v žrelu, zbolelih v letih 1963-87, v Sloveniji in na Danskem po spolu in obdobjih opazovanja



**FIGURE 4:** One- and five-year relative survival rates of pharyngeal cancer patients, diagnosed in 1963-87 in Slovenia and Denmark, by sex and period of observation



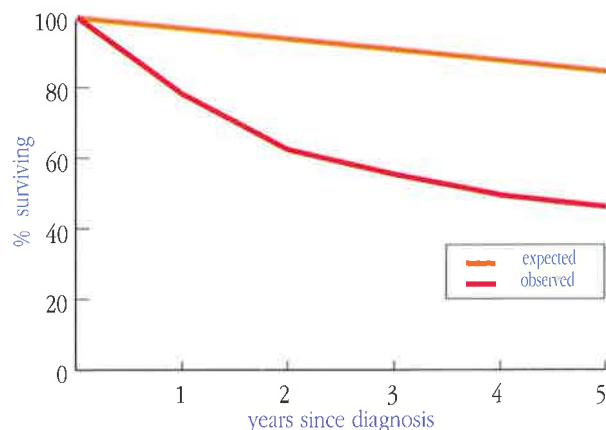
Le 10% bolnikov z rakom žrela v Sloveniji odkrijemo z lokalizirano boleznijo, ko jo lahko še uspešno zdravimo. V tem je tudi vzrok, da se odstotek petletnega preživetja kljub agresivnejšemu zdravljenju v zadnjih desetih letih, široka resekcija s primarno rekonstrukcijo s pomočjo mikrovaskularno prostih režnjev, kemoterapija, ni povečal. Z obsevanjem so bili zdravljeni nekateri bolniki z zgodaj odkritim rakom. Bolnike z napredovalo, neoperabilno boleznijo smo zdravili z obsevanjem ali s citostatiki ali s kombinacijo obeh načinov zdravljenja (47). Medtem ko se triletno preživetje nakazano izboljšuje, ostaja petletno preživetje nespremenjeno. To si lahko pojasnimo z dejansko večjo prisotnostjo oddaljenih zasevkov pri bolnikih kot pa jo kaže tabela 2.

Only about 10% of patients with pharyngeal carcinoma in Slovenia are diagnosed in the early stage of disease, when treatment is expected to be successful. This explains the results of our treatment, which are unfavourable in spite of the fact that more aggressive treatment modalities were used, especially in the last decade of the observed period (extensive resections with primary reconstruction with microvascular free flaps, chemotherapy). Radiotherapy was occasionally used for early carcinoma and/or together with chemotherapy for inoperable tumors (47). While the survival rate up to three years after treatment seems to improve, the 5-year survival remains unchanged. The explanation for this is the high incidence of distant metastases in patients with advanced pharyngeal carcinoma, which seems to be underestimated in our material.

## GRLO

## LARYNX

MKB 8 / ICD 8: 161



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z rakom grla, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of laryngeal cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom grla 2106 moških in 158 žensk. Pri 103 bolnikih (4%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka grla zmerno naraščala pri obeh spolih (30,46). V letih 1963-67 je bila groba incidenčna mera 5,7/100.000 moških in 0,6/100.000 žensk, v letih 1988-90 pa 10,4/100.000 moških in 0,7/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 94% v letih 1963-67 na 99% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se ni spreminjala (tabela 1). Največ bolnikov je bilo v starostni skupini 55-64 let. Razširitev bolezni pred zdravljenjem je bila ugodnejša v vsakem naslednjem obdobju opazovanja, razen v zadnjem, v letih 1988-90 (tabela 2).

Odstotek relativnega enoletnega preživetja bolnikov z rakom grla se je statistično značilno povečal v zadnjih treh obdobjih

TABELA 1: Grlo. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Larynx. Patients included in the analysis by sex, age and period of observation.

Sex	Period of observation	No.	Age at diagnosis (%)					
			-14	15-44	45-54	55-64	65-74	75+
Males	1963-67	208	0.0	4.3	14.9	43.8	26.9	10.1
	1968-72	301	0.0	11.0	17.6	32.6	30.2	8.6
	1973-77	346	0.0	8.1	25.4	24.3	33.2	9.0
	1978-82	412	0.0	7.0	27.9	26.9	27.9	10.2
	1983-87	459	0.0	6.8	26.1	39.0	18.5	9.6
	1988-90	297	0.0	6.1	24.9	40.1	18.5	10.4
	1963-90	2023	0.0	7.3	23.8	33.7	25.6	9.6
Females	1963-67	16	0.0	25.0	12.5	25.0	31.3	6.3
	1968-72	16	0.0	6.3	6.3	43.8	37.5	6.3
	1973-77	17	0.0	5.9	29.4	23.5	35.3	5.9
	1978-82	35	0.0	11.4	20.0	31.4	20.0	17.1
	1983-87	33	0.0	21.2	15.2	48.5	12.1	3.0
	1988-90	21	0.0	9.5	23.8	38.1	14.3	14.3
	1963-90	138	0.0	13.8	18.1	36.2	22.5	9.4

In the period 1963-90 a total of 2106 male and 158 female patients with laryngeal cancer were diagnosed in Slovenia. In 103 patients (4%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence increased moderately in both sexes (30,46). In the period 1963-67 the crude rate was 5.7/100,000 males and 0.6/100,000 females; in 1988-90 it was 10.4/100,000 males and 0.7/100,000 females. The percentage of microscopically confirmed cases increased from 94% in 1963-67 to 99% in 1988-90. The age distribution was fairly stable, with a peak in the age group 55-64 (Table 1). The extent of disease at diagnosis was more favourable in each subsequent time period except in the last, 1988-90 (Table 2).

The relative one-year survival rate of male laryngeal cancer patients increased significantly in the last three periods of

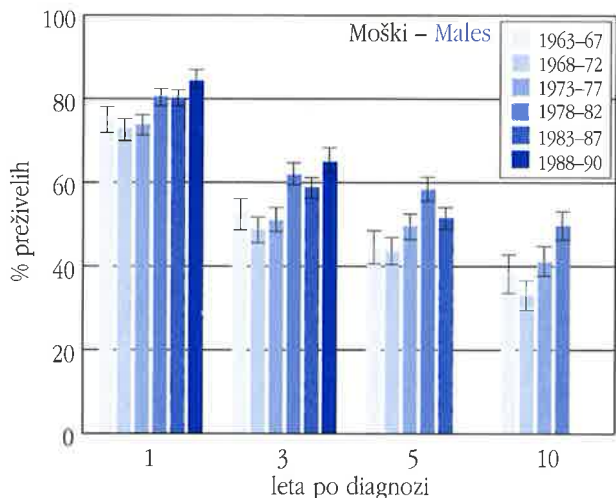
TABELA 2: Grlo. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

TABLE 2: Larynx. Patients included in the analysis by sex, extent of disease and period of observation.

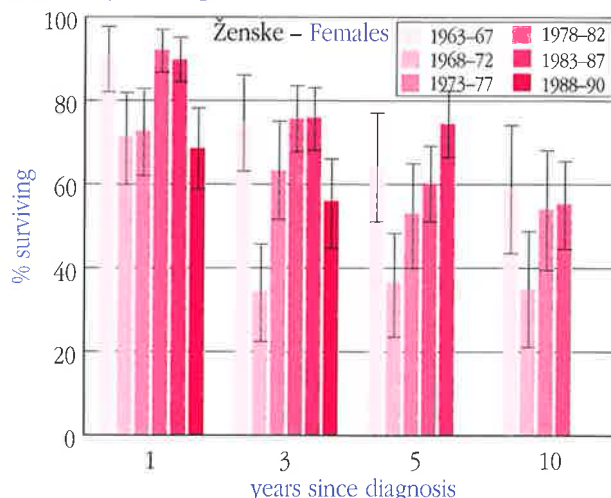
Sex	Period of observation	No.	Extent of disease (%)			
			Localized	Regional	Distant	Unknown
Males	1963-67	208	-	-	-	-
	1968-72	301	40.2	53.5	3.7	2.0
	1973-77	346	48.6	42.2	7.2	1.4
	1978-82	412	54.4	36.2	7.8	1.7
	1983-87	459	56.4	38.1	2.8	2.6
	1988-90	297	48.1	46.1	4.0	1.7
	1963-90	2023	50.4	42.3	5.1	1.9
Females	1963-67	16	-	-	-	-
	1968-72	16	56.3	43.8	0.0	0.0
	1973-77	17	52.9	41.2	5.9	0.0
	1978-82	35	42.9	45.7	5.7	5.7
	1983-87	33	54.5	42.4	3.0	0.0
	1988-90	21	42.9	42.9	14.3	0.0
	1963-90	138	49.2	43.4	5.7	1.6



**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom grla zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with laryngeal cancer diagnosed in the period 1963 – 90 by sex and period of observation.



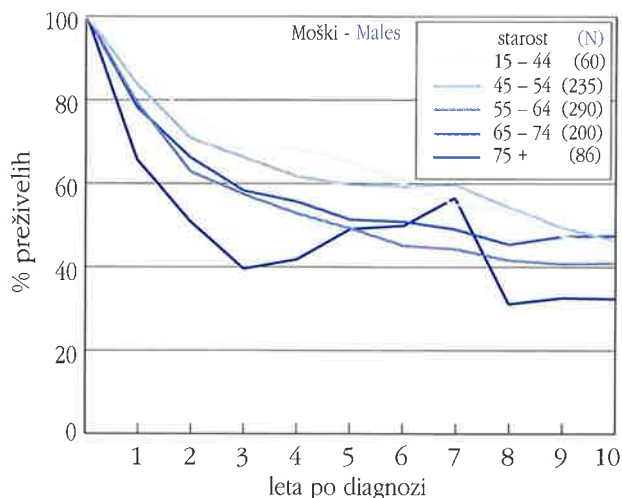
**TABELA 3:** Grlo. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Larynx. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	71.85	46.12	35.44	22.82	87.50	68.75	56.25	43.75	74.65	52.15	44.14	37.91	89.47	73.82	63.78	58.32
1968-72	69.51	42.96	35.18	20.89	68.75	31.25	31.25	25.00	72.11	48.25	43.06	32.70	70.56	33.92	36.09	34.60
1973-77	70.39	44.90	40.21	26.00	70.59	58.82	47.06	41.18	73.01	50.35	49.08	40.53	71.93	62.55	52.50	53.46
1978-82	76.89	54.76	47.60	32.23	88.57	68.57	51.43	40.00	79.69	61.20	57.68	49.12	91.12	74.88	59.64	54.71
1983-87	76.97	52.82	43.02		87.88	72.51	69.35		79.40	58.24	50.97		88.86	75.10	73.69	
1988-90	81.05	58.65			66.67	52.38			83.45	64.27			67.84	55.38		

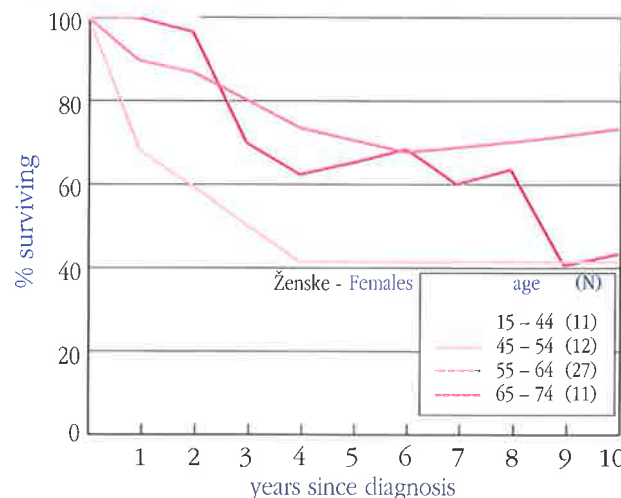
opazovanja, od 74% v letih 1963-67 na 83% v letih 1988-90. Odstotek relativnega triletnega preživetja se je povečal v še večji meri, medtem ko se je odstotek petletnega preživetja statistično značilno povečeval le v obdobju 1968-82 (slika 2, tabela 3). Pri ženskah se zaradi majhnega števila primerov intervali zaupanja prekrivajo, nakazano pa je večanje odstotka preživelih.

observation, from 74% in 1963-67 to 83% in 1988-90. The three-year survival rates increased even more, while the five-year rates increased significantly during the period 1968-82 (Figure 2, Table 3). In females, due to the smaller number of observed patients, the confidence intervals are overlapping; however a tendency towards higher rates is observed.

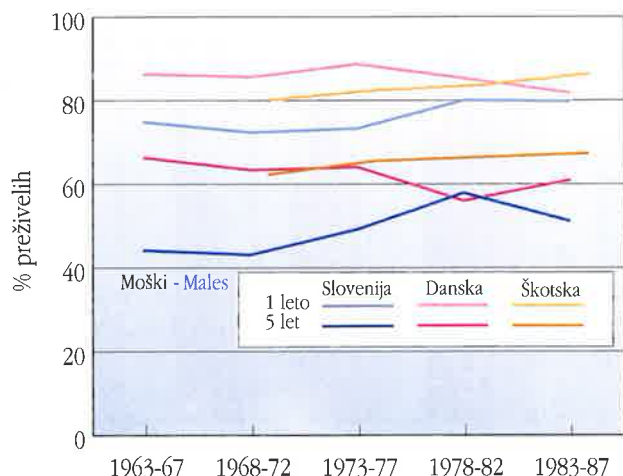
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom grla zbolelih v letih 1978 – 87 po spolu in starosti.



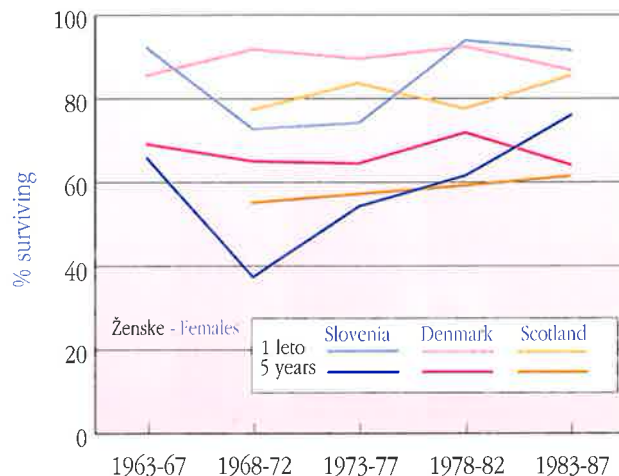
**FIGURE 3:** Relative ten-year survival of laryngeal cancer patients diagnosed in the period 1978 – 87 by sex and age.



**SLIKA 4:** Eno- in petletno relativno preživetje bolnikov z rakom grla, zbolelih v letih 1963-87, v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja



**FIGURE 4:** One- and five-year relative survival rates of laryngeal cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland by sex and period of observation



Relativno preživetje bolnikov, starih do 54 let, je bilo ugodnejše kot preživetje starejših (slika 3).

Incidenca raka grla narašča v primerjavi z rakom ustne votline in žrela manj strmo; vedno več bolezni je odkrite zgodaj, ko je še lokalizirana. Izboljšanje eno- in triletnega preživetja gre deloma na račun zgodnejšega odkrivanja bolezni in deloma na račun izboljšane načina zdravljenja: uporabe intraoperativnih pregledov zmrzlih rezov, radikalnejše operacije in obsevanja regionalno razširjene bolezni. V zadnji polovici opazovanega obdobja v zdravljenju zgodnjih stadijev raka vse več uporabljamo obsevanje, ki skupaj s konzervirajočo operacijo supraglotičnega karcinoma ohranja govor večjemu številu bolnikov kot v preteklih obdobjih.

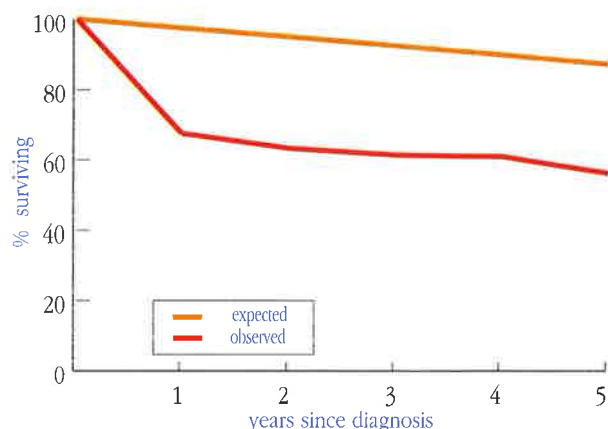
In relation to age, patients up to the age of 54 years survived better than the elderly (Figure 3).

In comparison with the carcinoma of the oral cavity and pharynx, the increase in the incidence of laryngeal carcinoma is less steep. At the same time there is a trend towards detection of laryngeal carcinoma in earlier stages. The improvement of survival at 1 and 3 years is partially due to earlier detection and partially to the improvement of the treatment itself: intraoperative use of frozen sections, rigorous surgical and/or radiotherapeutic management of the regional disease. In the last half of the studied period, there is a trend toward radiation treatment of early glottic carcinoma which, together with conservation surgery of supraglottic carcinoma, resulted in voice preservation in a far greater proportion of patients compared to the earlier period.

## ŠČITNICA

## THYROID

MKB 8 / ICD 8: 193



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z rakom ščitnice, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of thyroid cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom ščitnice 313 moških in 770 žensk. Pri 73 bolnikih (7%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

Slovenija sodi med dežele z relativno nizko incidenco raka ščitnice, v povprečju je incidenca pri ženskah trikrat večja kot pri moških. V zadnjih letih je incidenca raka ščitnice zmerno naraščala le pri ženskah do 55. leta starosti, pri obeh spolih je po 65. letu starosti upadala (30,48). V letih 1963-67 je bila groba incidenčna mera 1,4/100.000 moških in 2,4/100.000 žensk, v letih 1988-90 pa 1,4/100.000 moških in 3,4/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal z 72% v letih 1963-67 na 99% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spremenila (tabela 1). V 70. in 80. letih je bil odstotek mlajših žensk večji kot v prejšnjih obdobjih. Razširitev bolezni ob

In the period 1963-90 a total of 313 male and 770 female patients with thyroid cancer were diagnosed in Slovenia. In 73 patients (7%) cancer was diagnosed at death and they are not included in the analysis.

Slovenia belongs to the countries with a relatively low risk of thyroid cancer. On average the incidence in females was three times higher than in males. In last years, a moderate increase was noted only in females up to 55 years of age, whereas the incidence decreased in both sexes after the age of 65 years (30,48). The crude incidence rate in 1963-67 was 1.4/100,000 males and 2.4/100,000 females; in 1988-90 it was 1.4/100,000 males and 3.4/100,000 females. The percentage of microscopically confirmed cases increased from 72% in

TABELA 1: Ščitnica. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Thyroid. Patients included in the analysis by sex, age and period of observation.

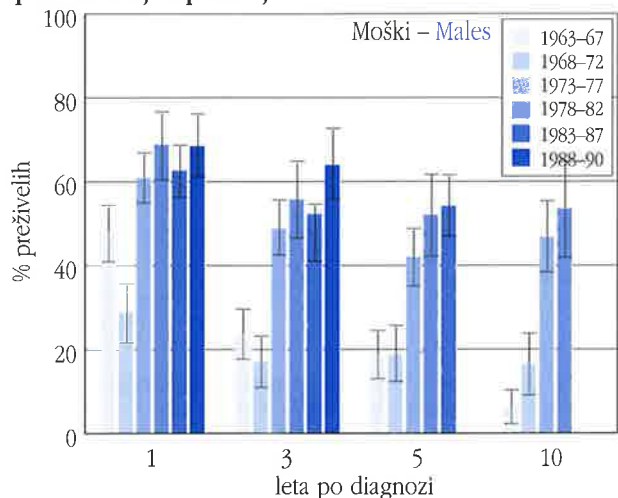
	Period of observation	No.	Age at diagnosis (%)					
			-14	15-44	45-54	55-64	65-74	75+
Males	1963-67	54	1.9	3.7	18.5	37.0	29.6	9.3
	1968-72	41	2.4	9.8	7.3	26.8	46.3	7.3
	1973-77	67	3.0	14.9	11.9	19.4	38.8	11.9
	1978-82	33	6.1	24.2	18.2	21.2	18.2	12.1
	1983-87	60	0.0	30.0	16.7	15.0	23.3	15.0
	1988-90	38	0.0	31.6	5.3	28.9	21.1	13.2
	1963-90	293	2.0	18.4	13.3	24.2	30.4	11.6
Females	1963-67	89	0.0	13.5	13.5	28.1	31.5	13.5
	1968-72	117	0.0	16.2	10.3	24.8	33.3	15.4
	1973-77	136	0.7	25.0	18.4	16.9	22.8	16.2
	1978-82	126	0.8	35.7	10.3	14.3	26.2	12.7
	1983-87	149	0.0	26.8	16.8	20.8	16.8	18.8
	1988-90	100	1.0	31.0	10.0	23.0	19.0	16.0
	1963-90	717	0.4	25.2	13.5	20.8	24.4	15.6

TABELA 2: Ščitnica. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

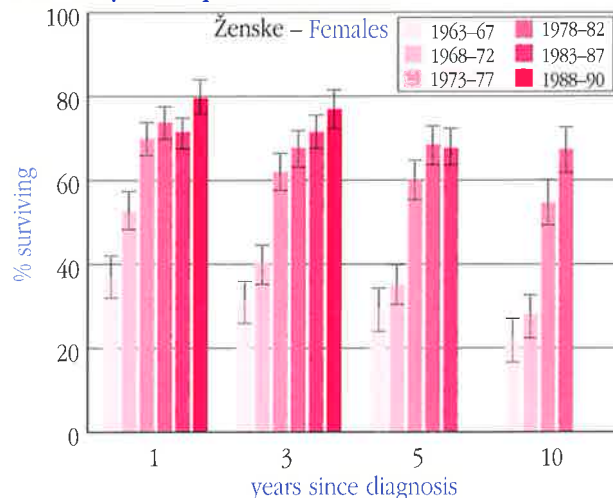
TABLE 2: Thyroid. Patients included in the analysis by sex, extent of disease and period of observation.

	Period of observation	No.	Extent of disease (%)			
			Localized	Regional	Distant	Unknown
Males	1963-67	54	-	-	-	-
	1968-72	41	22.0	26.8	46.3	4.9
	1973-77	67	16.4	28.4	52.2	3.0
	1978-82	33	36.4	30.3	27.3	6.1
	1983-87	60	16.7	55.0	25.0	3.3
	1988-90	38	21.1	57.9	18.4	2.6
	1963-90	293	20.9	39.7	35.6	3.8
Females	1963-67	89	-	-	-	-
	1968-72	117	36.8	17.1	37.6	8.5
	1973-77	136	44.1	24.3	29.4	2.2
	1978-82	126	36.5	31.7	28.6	3.2
	1983-87	149	37.6	35.6	21.5	5.4
	1988-90	100	30.0	42.0	26.0	2.0
	1963-90	717	37.4	29.9	28.3	4.3

**SLIKA 2: Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom ščitnice zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.**



**FIGURE 2: Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with thyroid cancer diagnosed in the period 1963 – 90 by sex and period of observation.**



**TABELA 3: Ščitnica. Opazovano in relativno preživetje po spolu in obdobju opazovanja.**  
**TABLE 3: Thyroid. Observed and relative survival by sex and period of observation.**

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	45.79	20.99	15.27	3.82	35.26	28.21	24.68	15.28	47.43	23.50	18.69	6.11	36.29	30.89	28.92	21.71
1968-72	27.50	15.00	15.00	10.00	50.43	35.90	29.05	18.76	28.67	17.07	18.77	16.39	52.06	39.67	34.56	27.51
1973-77	57.90	42.66	33.52	28.95	67.42	56.70	52.10	40.61	60.27	48.38	41.63	46.29	69.12	61.24	59.46	53.93
1978-82	66.15	50.40	44.10	37.80	71.43	62.70	60.32	51.59	68.16	55.23	51.64	53.05	72.94	66.98	67.69	66.57
1983-87	60.00	46.67	45.00		69.13	65.75	58.97		62.07	51.79	53.73		70.73	70.68	66.90	
1988-90	65.79	57.62			77.00	70.95			67.82	63.37			78.75	76.09		

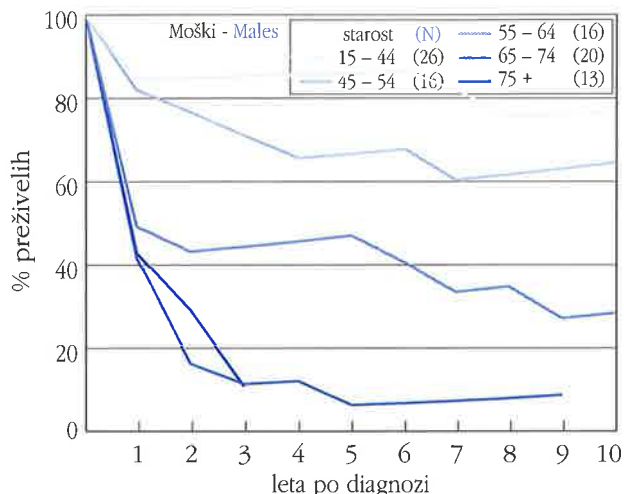
ugotovitvi se je tudi spreminjala (tabela 2). V 80. letih so ugotovili manj lokalizirane in več regionalno razširjene bolezni, istočasno pa tudi manj bolezni z oddaljenimi zasevki.

Statistično značilno se je povečal odstotek relativnega petletnega preživetja pri obeh spolih v obdobju 1973-77, nakazano je tudi povečanje v naslednjih dveh obdobjih (slika 2, tabela 3). Odstotki so bili statistično značilno večji pri ženskah kot pri moških.

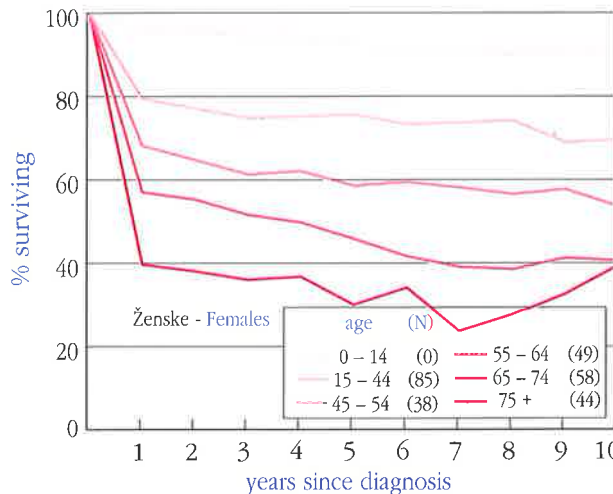
1963-67 to 99% in 1988-90. The age distribution changed (Table 1); more younger women were diagnosed in the 70's and 80's than before. The extent of disease at diagnosis changed in both sexes. Fewer patients were diagnosed in localised stage in the 80's than before (Table 2).

A significant increase in relative one-, three-, and five-year survival rate in both sexes was observed after the time period 1973-77 incl. (Figure 2, Table 3). Survival was higher in female (70%) than in male patients (60%-50%).

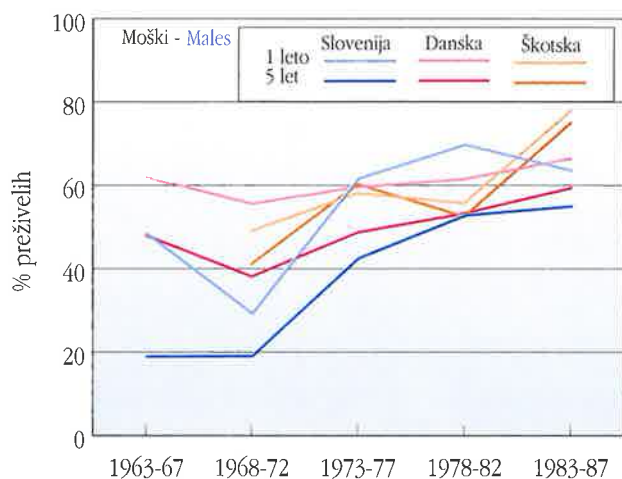
**SLIKA 3: Relativno desetletno preživetje bolnikov z rakom ščitnice zbolelih v letih 1978 – 87 po spolu in starosti.**



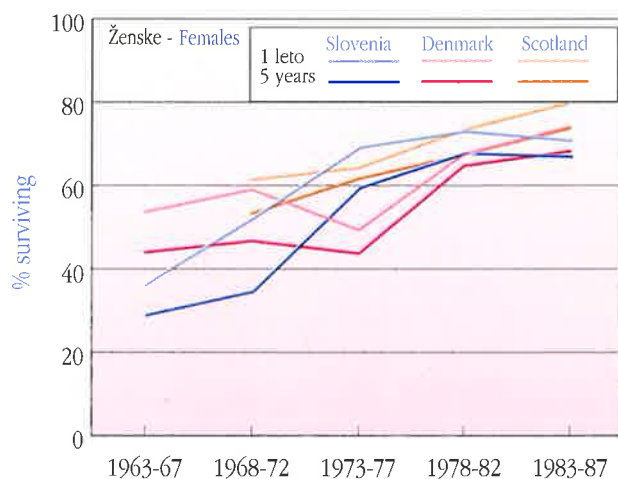
**FIGURE 3: Relative ten-year survival of thyroid cancer patients diagnosed in the period 1978 – 87 by sex and age.**



**SLIKA 4:** Eno- in petletno relativno preživetje bolnikov z rakom ščitnice, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja



**FIGURE 4:** One- and five-year relative survival rates of thyroid cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland by sex and period of observation



Glede na starost je bilo relativno preživetje pri mlajših obeh spolov ugodnejše kot pri starejših (slika 3).

Rak ščitnice zajema različne vrste raka, ki se razlikujejo po morfologiji in biološki naravi. Diferencirane oblike raka ščitnice (papilarni, folikularni in medularni karcinom) imajo dokaj dobro napoved, medtem ko imajo nediferencirani, anaplastični karcinomi ščitnice, izredno hiter potek in neugodno napoved (mediana vrednost je manj kot 5 mesecev). Osnovni način zdravljenja diferenciranih karcinomov ščitnice je operacija. Najprimernejše zdravljenje za bolnike z anaplastičnim karcinomom pa v svetu še ni dokončno ugotovljeno. Večina avtorjev meni, da je potrebno kombinirano zdravljenje s kemoterapijo in obsevanjem, in v primeru, če se tumor zmanjša, operativna odstranitev ostanka tumorja.

Na Onkološkem inštitutu v Ljubljani smo v letu 1973 pričeli s centralizacijo bolnikov z rakom ščitnice. V predoperativni diagnostiki smo uporabljali citološke punkcije s tanko iglo. Za prikaz anatomije ščitnice, lege tumorja in njegovih scintigrafskih značilnosti pa scintigrafijo s tehnecijem (<sup>99m</sup>Tc) ali z jodom (<sup>131</sup>I). V letu 1973 smo na Onkološkem inštitutu uvedli sodobne načine operativnega zdravljenja, t.j. ekstrakapsularno lobektomijo skupaj z istmusom, kot najmanjši kirurški postopek. Intraoperativno smo opravili histološko preiskavo vzorca, in v primeru histološko potrjenega raka, odstranili ščitnico v celoti ali skoraj v celoti (totalna tiroidektomija ali tim. skoraj totalna tiroidektomija). Operacija smo kombinirali z zdravljenjem z jodom (<sup>131</sup>I), če smo po operaciji dokazali kopičenje joda na vratu ali drugje v telesu. Uvedba takega načina zdravljenja, kombinacije radikalne odstranitve tumorja v kombinaciji s pooperativnim zdravljenjem z jodom, je privedla do skokovitega izboljšanja preživetja, kar je še posebej opazno pri moških (slika 2). V naslednjih letih smo skušali razširiti vodila za zdravljenje raka ščitnice tudi na druge bolnišnice v Sloveniji.

V obdobjih 1963-67 in 1968-72 v analizo preživetja najverjetneje niso zajeti vsi primeri bolnikov z anaplastičnim karcinomom, ker so tedaj bolniki umirali večinoma zelo zgodaj, še

In relation to age at diagnosis younger patients of both sexes survived better than the elderly (Figure 3).

Thyroid cancer covers a range of cancer types differing from each other by morphology and biological nature. Differentiated types of thyroid cancer (papillary, follicular and medullary carcinomas) have a relatively favourable prognosis, while non-differentiated anaplastic carcinomas of the thyroid are associated with an extremely rapid course and poor prognosis (the median survival is generally less than 5 months).

The basic treatment for differentiated thyroid cancer is surgery. The most suitable treatment approach to the patients with anaplastic carcinoma, however, has not been finally determined yet. Most authors believe that a combination of chemotherapy and irradiation is required, and in the case when such treatment results in tumor reduction, the residual disease is removed by surgery.

In 1973, centralization of thyroid cancer patients was introduced at the Institute of Oncology in Ljubljana. Preoperative diagnostics included fine needle aspiration biopsy of the thyroid. The anatomy of the thyroid, tumor site and its features were imaged by scintiscan using Technetium (<sup>99m</sup>Tc) or Iodine (<sup>131</sup>I). In 1973, new methods of surgical treatment were introduced at the Institute of Oncology in Ljubljana, among them extracapsular lobectomy with isthmectomy as the minimal surgical procedure. Histological examination of the sample was done intraoperatively; in the case of a histologically confirmed cancer, the whole thyroid or just a part of it was removed by total or subtotal thyroidectomy, respectively. If postoperatively an uptake of Iodine in the neck or elsewhere in the body could be established, the surgery was combined with Iodine treatment (<sup>131</sup>I). This therapeutic approach, i.e. radical tumor removal combined with postoperative Iodine (<sup>131</sup>I) treatment, resulted in a marked increase in survival, which was particularly evident in males (Figure 2). In the following years we tried to implement our guidelines for thyroid cancer treatment in other Slovenian hospitals.

pred pričetkom zdravljenja. V letu 1973 smo na Onkološkem inštitutu uvedli za bolnike z anaplastičnim karcinomom kombinirano zdravljenje s kemoterapijo, obsevanjem in operacijo; slednjo v primeru, če se je tumor po kemoterapiji in obsevanju zmanjšal (49). Od leta 1988 nam meritev DNA na pretočnem citometru za sledenje učinkov zdravljenja omogoča boljše načine kemoterapije. V tem obdobju je bilo tudi več bolnikov, ki smo jim tumor lahko odstranili in s tem podaljšali preživetje.

Za spremljanje bolnikov z rakom ščitnice smo v Sloveniji leta 1985 uvedli sistematično določanje tumorskega markerja tireoglobulina, v letu 1986 pa še ultrazvočno diagnostiko. Slednja je bila uvedena tudi v predoperativne postopke.

V letu 1983 smo uvedli na Onkološkem inštitutu kemoterapijo samo ali v kombinaciji z obsevanjem tudi za diferencirane oblike raka pri neoperabilnih tumorjih. Izboljšanje eno- in triletnega preživetja za obdobji 1983-87 ter 88-90 v primerjavi z 1973 se sicer nakazuje, ni pa zelo izrazito. Ugotovili smo, da je bil delež bolnikov z anaplastičnim karcinomom, ki ima najslabšo prognozo, večji v obdobju 1988-90, kot v predhodnem obdobju, kar je seveda lahko vplivalo na preživetje.

Na prognozo bolnikov z rakom ščitnice vplivajo različni dejavniki: starost bolnika, velikost in histološka vrsta tumorja, invazija tumorja v žile in/ali kapsulo, oddaljene metastaze in spol bolnika. Izkazalo se je, da je najpomembnejši napovedni dejavnik starost. Bolniki mlajši od 50 let imajo odlično prognozo (slika 3). V zvezi z naraščajočo starostjo se preživetje bolnikov z rakom ščitnice postopoma slabša. Obstaja tudi zveza med starostjo bolnika ter histološko obliko oz. stopnjo diferenciacije karcinoma. Pri starejših bolnikih najdemo slabo diferencirane in nediferencirane - anaplastične karcinome, ki so pri bolnikih mlajših od 45 let izjemno redki (50). Preživetje žensk je boljše kot moških. To smo ugotovili tudi za bolnike v Sloveniji v vseh starostnih skupinah (slika 3). Od leta 1973 je preživetje v Sloveniji povsem primerljivo s preživetji na Danskem in Škotskem, kljub temu, da je v Sloveniji več bolnikov s prognostično ugodnim nediferenciranim karcinomom ščitnice (48).

The analysis of survival for the periods 1963-67 and 1968-72 probably did not cover all the cases of anaplastic thyroid carcinoma since those patients mostly died rather early, even before the beginning of therapy. In 1973, a combined approach to the treatment of patients with anaplastic thyroid carcinoma came into use at the Institute of Oncology, consisting of chemotherapy, irradiation and surgery; the latter was used if a tumor regression had been induced by chemotherapy and irradiation (49). Since 1988, the following of treatment effects by means of flow-cytophotometric DNA measurements enabled us to optimize chemotherapeutic schedules. Also, in that period the number of patients whose tumors were rendered operable increased.

In 1985, systematic determination of thyroglobulin tumor marker was introduced in Slovenia for the needs of thyroid cancer patient follow up. This was complemented by ultrasonography in 1986; the latter method was also made part of the preoperative workup.

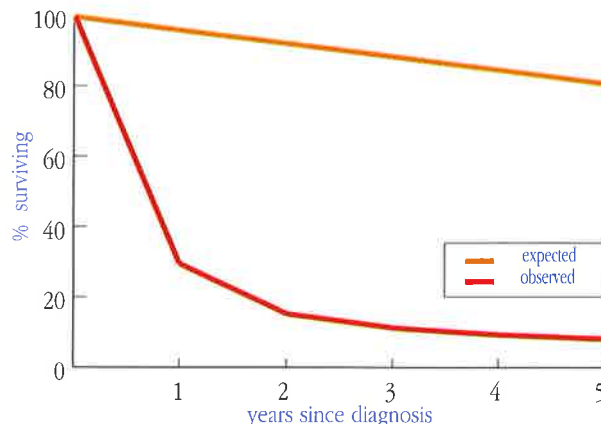
In 1983, chemotherapy alone or in combination with radiotherapy started to be used also for the differentiated forms of cancer in inoperable tumors. In comparison with the year 1973, an increase in the one- and three-year survival for the periods 1983-87 and 1988-90 can be seen, which however is not particularly marked. We have found that the rate of patients with anaplastic carcinoma which is associated with the worst prognosis was greater in the period 1988-90 than in the previous period; of course, this might have influenced the survival.

The prognosis of thyroid cancer patients is influenced by different factors: patient's age, size and histological type of the tumor, its invasion into the veins and/or capsule, and distant metastases, and patient's sex. Patient's age has turned out to be the most relevant prognostic factor. Patients under 50 years of age have an excellent prognosis (Figure 3). By advancing age, the survival of thyroid cancer patients gradually decreases. There is also a correlation between the patient's age and the histological type or the degree of carcinoma differentiation. Elderly patients present with poorly differentiated and non-differentiated anaplastic carcinomas which are exceptionally rare in patients under 45 years of age (50). Females survive better than males. This observation applies to all age groups in Slovenia (Figure 3). Since 1973, the survival of thyroid cancer patients in Slovenia has been fully comparable with the respective survivals in Denmark and Scotland, irrespective of the fact that Slovenia has more patients with the prognostically unfavourable non-differentiated thyroid carcinoma (48).

## PLJUČA

## LUNG

MKB 8 / ICD 8 : 162



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov s pljučnim rakom, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of lung cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za pljučnim rakom 14725 moških in 2465 žensk. Pri 1484 bolnikih (9%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca pljučnega raka pri moških strmo naraščala do leta 1980, kasneje bolj zmerno (30,31,51), pri ženskah strmejšje v 80. letih. V letih 1963-67 je bila groba incidenčna mera 42,1/100.000 moških in 6,2/100.000 žensk, v letih 1988-90 pa 73/100.000 moških in 13,9/100.000 žensk. Odstotek mikroskopsko potrjenih primerov raka se je povečal s 66% v letih 1963-67 na 91% v letih 1988-90.

Starostna porazdelitev v analizo vključenih bolnikov se je spreminjala (tabela 1), ne pa tudi ocena razširjenosti bolezni ob diagnozi (tabela 2).

In the period 1963-90 a total of 14725 male and 2465 female patients with lung cancer were diagnosed in Slovenia. In 1484 patients (9%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence in males increased steeply till 1980, and moderately thereafter (30,31,51). In females, the increase was steeper in the 80's. In 1963-67 the incidence rates were 42.1/100,000 males and 6.2/100,000 females, while in 1988-90 they were 73/100,000 males and 13.9/100,000 females. The percentage of microscopically confirmed cases increased from 66% in 1963-67 to 91% in 1988-90.

The age distribution changed (Table 1), but the extent of disease at diagnosis did not (Table 2).

TABELA 1: Pljuča. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Lung. Patients included in the analysis by sex, age and period of observation.

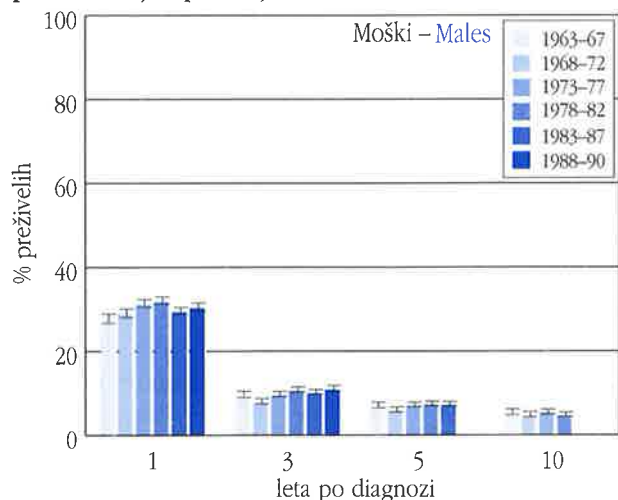
Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b>							
1963-67	1562	0.0	3.9	10.9	39.6	37.6	7.9
1968-72	1848	0.0	5.0	9.4	32.2	42.9	10.4
1973-77	2399	0.0	4.8	16.0	26.5	39.4	13.3
1978-82	2712	0.0	3.7	22.3	27.3	33.2	13.5
1983-87	2962	0.0	3.9	18.1	37.3	24.8	15.9
1988-90	2027	0.0	3.5	14.9	42.6	26.0	12.9
1963-90	13510	0.0	4.1	16.1	33.7	33.2	12.8
<b>Females</b>							
1963-67	241	0.0	11.2	10.0	32.4	35.7	10.8
1968-72	263	0.0	8.7	13.7	30.4	33.5	13.7
1973-77	374	0.0	5.6	15.8	25.4	34.2	19.0
1978-82	416	0.0	5.3	18.0	26.0	32.0	18.8
1983-87	514	0.0	6.6	14.8	28.2	24.7	25.7
1988-90	388	0.0	6.4	12.9	28.9	31.4	20.4
1963-90	2196	0.0	6.9	14.6	28.1	31.1	19.2

TABELA 2: Pljuča. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

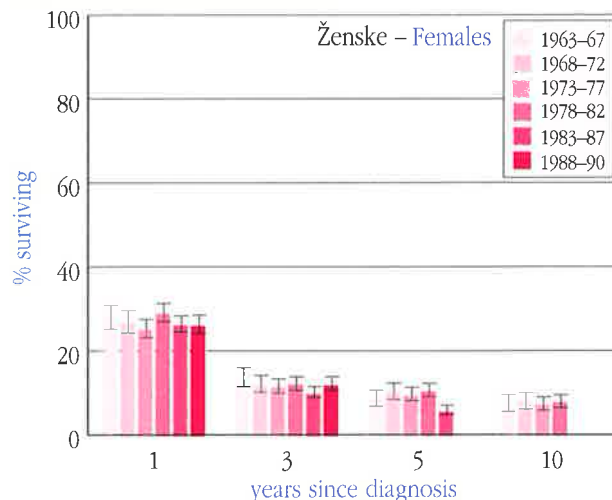
TABLE 2: Lung. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
<b>Males</b>					
1963-67	1562	-	-	-	-
1968-72	1848	20.4	36.3	30.7	12.5
1973-77	2399	28.6	34.5	32.6	4.3
1978-82	2712	31.0	37.0	27.1	5.0
1983-87	2962	28.6	37.6	29.2	4.7
1988-90	2027	28.2	34.8	31.7	5.3
1963-90	13510	27.8	36.2	30.1	6.0
<b>Females</b>					
1963-67	241	-	-	-	-
1968-72	263	16.0	25.9	46.4	11.8
1973-77	374	18.2	24.6	48.4	8.8
1978-82	416	24.8	34.4	36.5	4.3
1983-87	514	24.5	30.5	35.6	9.3
1988-90	388	21.6	28.4	43.6	6.4
1963-90	2196	21.6	29.2	41.3	7.9

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov s pljučnim rakom zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with lung cancer diagnosed in the period 1963 – 90 by sex and period of observation.



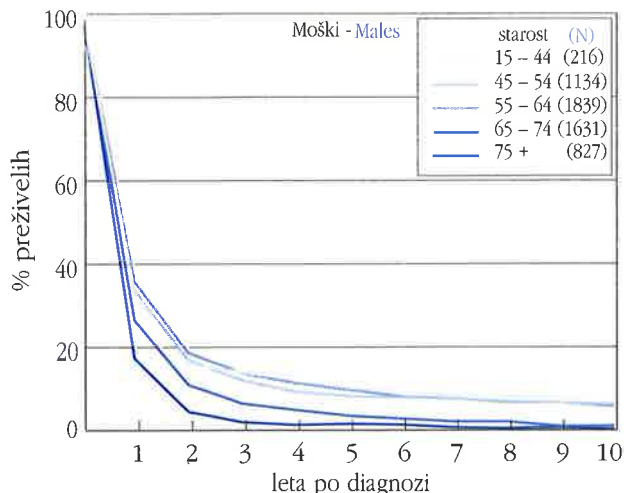
**TABELA 3:** Pljuča. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Lung. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	71.85	46.12	35.44	22.82	87.50	68.75	56.25	43.75	74.65	52.15	44.14	37.91	89.47	73.82	63.78	58.32
1968-72	69.51	42.96	35.18	20.89	68.75	31.25	31.25	25.00	72.11	48.25	43.06	32.70	70.56	33.92	36.09	34.60
1973-77	70.39	44.90	40.21	26.00	70.59	58.82	47.06	41.18	73.01	50.35	49.08	40.53	71.93	62.55	52.50	53.46
1978-82	76.89	54.76	47.60	32.23	88.57	68.57	51.43	40.00	79.69	61.20	57.68	49.12	91.12	74.88	59.64	54.71
1983-87	76.97	52.82	43.02		87.88	72.51	69.35		79.40	58.24	50.97		88.86	75.10	73.69	
1988-90	81.05	58.65			66.67	52.38			83.45	64.27			67.84	55.38		

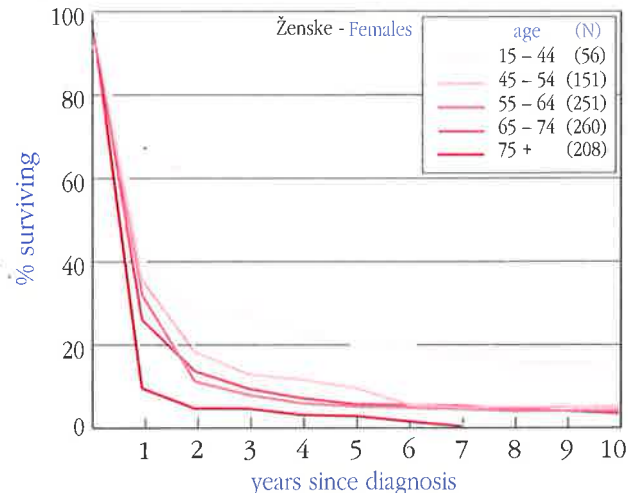
Relativno petletno preživetje se pri moških v vseh petih opazovanih obdobjih ni spremenilo, pri ženskah se je v zadnjem obdobju celo statistično značilno poslabšalo (slika 2, tabela 3). Pri mlajših bolnikih obeh spolov je bilo preživetje boljše kot pri starejših (slika 3).

The relative five-year survival rate in males was almost stable over the 28 years of observation while in females there was even a decline in the last time-period (Figure 2, Table 3). In relation to age younger patients survived better than the elderly (Figure 3).

**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom pljuč obolelih v letih 1978 – 87 po spolu in starosti.

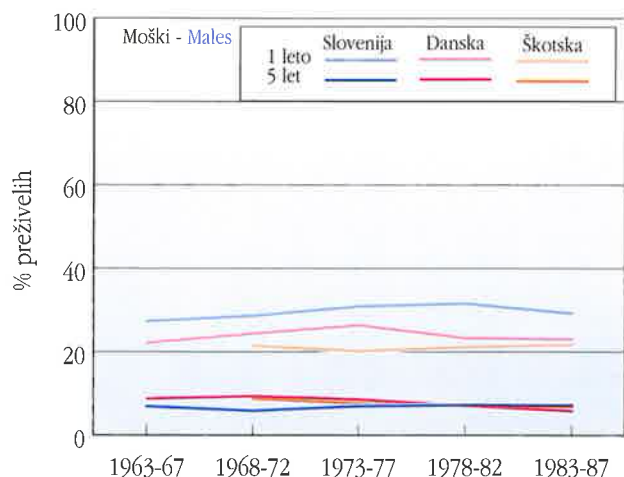


**FIGURE 3:** Relative ten-year survival of lung cancer patients diagnosed in the period 1978 – 87 by sex and age.

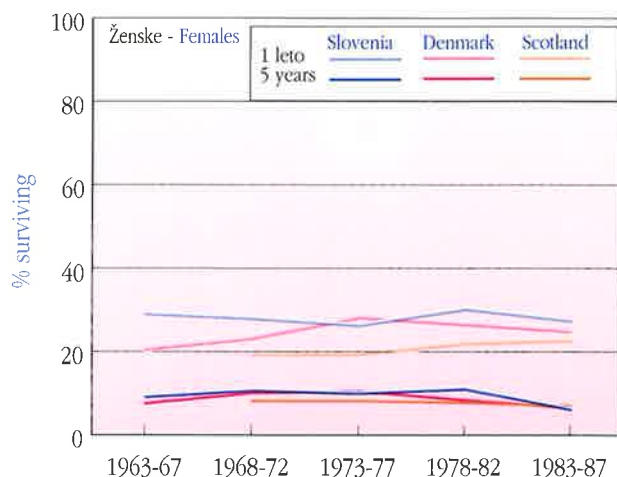




**SLIKA 4:** Eno- in petletno relativno preživetje bolnikov s pljučnim rakom, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



**FIGURE 4:** One- and five-year relative survival rates of lung cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation



Porast odstotka mikroskopsko potrjenih primerov sovпада predvsem s širjenjem uporabe fiberbronhoskopa po letu 1975. Preden je bil ta dosegljiv večini pljučnih oddelkov v Sloveniji, je preiskovalec marsikdaj videl tumor skozi rigidni bronhoskop, ni pa mogel odvzeti biopsije in je proces ostal mikroskopsko nepotrjen. Drugi razlog za večji odstotek potrjenih rakov je razvoj enotne doktrine obravnave pljučnega raka pri bolnikih, ki niso zdravljeni z operacijo (52,53). Razdelitev razširjenosti bolezni na lokalizirano, regionalno razširjeno in z oddaljenimi zasevki je groba in zato neprimerena za primerjavo z drugimi klasifikacijami. Temelji predvsem na rentgenski sliki hilusnih in mediastinalnih bezgavk, ki je brez računalniške tomografije nezanesljiva. V obravnavanem 28-letnem obdobju opazovanja se je spremenila tudi TNM klasifikacija. Do leta 1987 so bile supraklavikularne bezgavke ocenjene kot oddaljeni zasevki, po tem letu kot regionalni. Način operativnega in obsevalnega zdravljenja se v opazovanem obdobju ni bistveno spremenil. Leta 1975 je bila uvedena kemoterapija kot osnovno zdravljenje mikrocelularnih karcinomov (54).

Dejstvo, da tri leta preživi okoli 10% moških in žensk, potrjuje pravilnost prepričanja tistih, ki trdijo, da sedanji načini zdravljenja vplivajo le na kakovost in na kratkoročno preživetje. Relativno ugodnejše preživetje mlajših bolnikov obeh spolov lahko pripišemo agresivnejšemu operativnemu in pri mikrocelularnih karcinomih tudi citostatskemu zdravljenju.

The increase in the proportion of microscopically verified cases correlates closely with the wider use of fiberbronchoscopy after 1975. Before this diagnostic facility was made available in most pulmological departments in Slovenia, the examiner using a rigid bronchoscope often saw a tumor but could not take a bioptic specimen, and therefore the process remained microscopically unverified. Another reason for the higher proportion of verified cancers is attributable to the development of a uniform treatment strategy concerning inoperable lung cancer patients (52,53).

The distribution of disease by extent, i.e. into localized disease, regional spread, and distant dissemination, is rough and therefore unsuitable for comparison with other classification systems. It is based primarily on the X-ray imaging of the hilar and mediastinal lymph nodes; this method is, however, rather unreliable unless backed up by computer tomography. During the course of the 28-year period, TNM classification was changed: till 1987, supraclavicular lymph nodes were regarded as a distant metastatic site, and after the appointed year as regional.

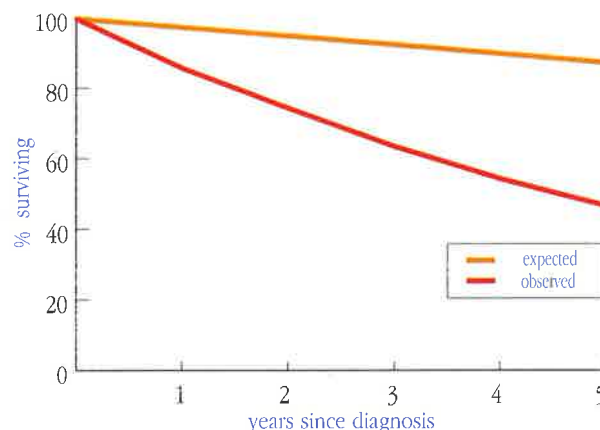
The methods of surgical and radiation treatment were not changed essentially in this period. In 1975, chemotherapy was introduced as the basic treatment for small-cell lung cancer (54).

The fact that (only) 10% of male and female patients survive 3 years confirms the belief that the presently available treatment methods can only influence the quality of life and short-term survival. The relatively more favourable survival rates in younger age groups of both sexes is attributable to more aggressive surgery and - in the case of small-cell carcinomas - also to chemotherapy.

# DOJKE

## BREAST

MKB 8 / ICD 8 : 174



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z rakom dojk, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of breast cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom dojk 118 moških in 12489 žensk. Pri 401 bolnicah (3%) je bil rak ugotovljen ob smrti in zato niso bile vključene v analizo.

V opazovanem 28-letnem obdobju je incidenca raka dojk pri ženskah strmo naraščala (3% povprečno letno); pri moških je bila ustaljena (30,31,55). V letih 1963-67 je bila groba incidenčna mera 0,5/100.000 moških in 30/100.000 žensk, v letih 1988-90 pa 0,6/100.000 moških in 66,5/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 87% v letih 1963-67 na 96% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1). Odstotek bolnic v najstarejši starostni skupini se je povečeval. Odstotek zgodnjega, lokaliziranega stadija se je v zadnjih obdobjih povečal (tabela 2).

**TABELA 1:** Dojke. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

**TABLE 1:** Breast. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b>							
1963-67	16	0.0	6.3	12.5	25.0	43.8	12.5
1968-72	16	0.0	18.8	0.0	37.5	25.0	18.8
1973-77	20	0.0	5.0	25.0	30.0	25.0	15.0
1978-82	19	0.0	5.3	10.5	10.5	52.6	21.1
1983-87	21	0.0	0.0	9.5	38.1	19.0	33.3
1988-90	16	0.0	0.0	12.5	50.0	18.8	18.8
1963-90	108	0.0	5.4	12.0	32.6	28.3	21.7
<b>Females</b>							
1963-67	1244	0.0	22.4	24.3	25.6	19.9	7.7
1968-72	1560	0.0	20.8	24.1	26.0	21.0	8.2
1973-77	2095	0.0	20.2	27.6	21.0	21.1	10.0
1978-82	2451	0.0	17.4	26.5	24.4	20.3	11.4
1983-87	2756	0.0	15.5	23.8	28.2	18.3	14.2
1988-90	1992	0.0	16.1	21.4	26.6	19.8	16.0
1963-90	12098	0.0	17.7	24.7	25.3	20.0	12.2

In the period 1963-90 a total of 118 male and 12489 female patients with breast cancer were diagnosed in Slovenia. In 401 female patients (3%) cancer was diagnosed at death and they are not included in the analysis.

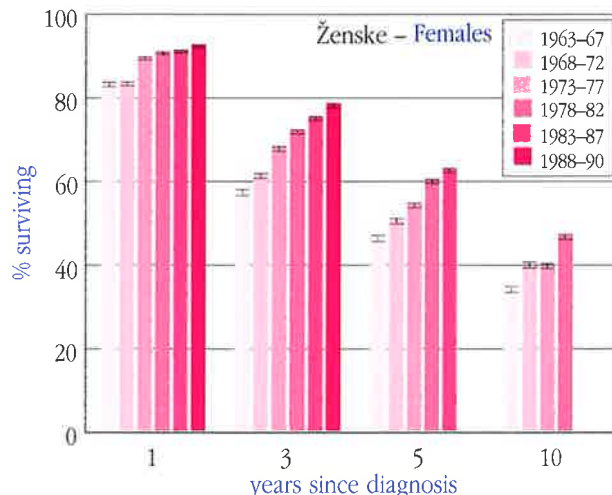
In this time-period the incidence in females increased steeply (3% per year), while in males it was relatively stable (30,31,55). In the period 1963-67 the incidence rates were 0.5/100,000 males and 30/100,000 females, while in the period 1988-90 they were 0.6/100,000 males and 66.5/100,000 females. The percentage of microscopically confirmed cases increased from 87% in 1963-67 to 96% in 1988-90. The age distribution of patients included in the analysis changed (Table 1). The percentage of patients in the eldest age group increased. In female patients the extent of disease at diagnosis was gradually more favourable (Table 2).

**TABELA 2:** Dojke. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

**TABLE 2:** Breast. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
<b>Males</b>					
1963-67	16	-	-	-	-
1968-72	16	43.8	18.8	37.5	0.0
1973-77	20	50.0	35.0	15.0	0.0
1978-82	19	42.1	57.9	0.0	0.0
1983-87	21	28.6	47.6	19.0	4.8
1988-90	16	31.3	50.0	18.8	0.0
1963-90	108	39.1	42.4	17.4	1.1
<b>Females</b>					
1963-67	1244	-	-	-	-
1968-72	1560	32.6	50.9	14.5	2.1
1973-77	2095	34.9	51.2	12.5	1.3
1978-82	2451	35.9	51.5	10.7	1.9
1983-87	2756	38.1	49.4	11.1	1.5
1988-90	1992	39.3	48.2	10.8	1.7
1963-90	12098	36.4	50.2	11.7	1.7

**FIGURE 2: Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with breast cancer diagnosed in the period 1963 – 90 by period of observation.**



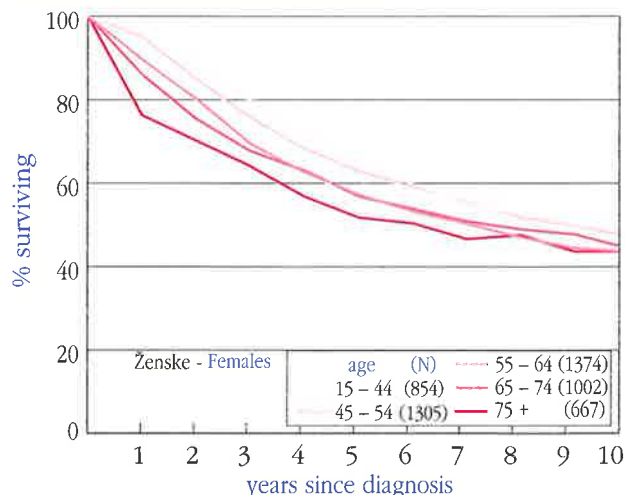
**TABELA 3: Dojke. Opazovano in relativno preživetje po spolu in obdobju opazovanja.**  
**TABLE 3: Breast. Observed and relative survival by sex and period of observation.**

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	70.59	47.06	35.29	17.65	80.95	53.67	41.58	27.09	73.68	54.11	45.40	31.96	82.43	56.81	45.93	33.90
1968-72	68.75	56.25	56.25	43.75	80.89	57.08	44.92	31.20	72.50	65.98	73.43	75.05	82.52	60.77	50.06	39.55
1973-77	75.00	50.00	50.00	25.00	86.75	63.08	48.33	31.19	78.50	57.33	62.80	40.15	88.50	67.12	53.79	39.40
1978-82	100.00	66.67	44.44	22.22	88.02	66.85	53.34	36.56	106.25	80.28	61.02	43.11	89.84	71.21	59.43	46.26
1983-87	66.67	42.86	33.33		88.29	69.51	55.27		71.63	52.98	47.48		90.24	74.33	62.02	
1988-90	75.00	62.50			89.59	72.46			78.66	72.30			91.50	77.40		

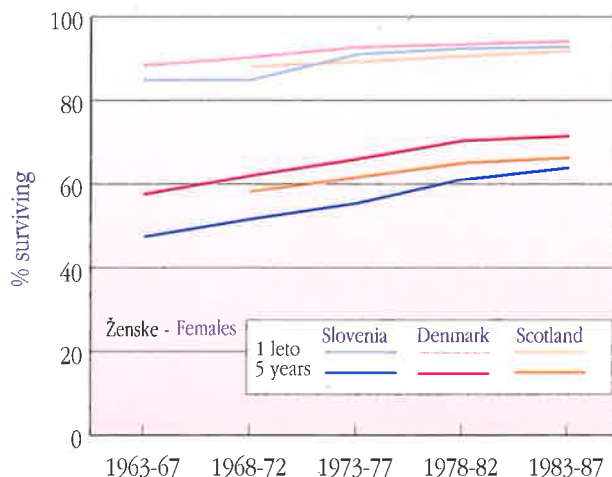
Odstotek relativnega enoletnega preživetja bolnic se je povečal, z 82% v letih 1963-67 na 91% v letih 1988-90. Odstotek tri- in petletnega preživetja se je povečal v še večji meri, od 56% na 76%, oziroma od 46% na 62% za zbolele v letih 1983-87 (slika 2, tabela 3). Mlajše bolnice so preživele v večjem odstotku kot starejše (slika 3).

The relative one-year survival rate of female breast cancer patients increased significantly, from 82% in 1963-67 to 91% in 1988-90. The three- and five- year survival rates increased even more: from 56% to 77%, and from 46% to 62% (Figure 2, Table 3). In relation to age at diagnosis younger women survived better than the elderly (Figure 3).

**FIGURE 3: Relative ten-year survival of breast cancer patients diagnosed in the period 1978 – 87 by age.**



**FIGURE 4: One- and five-year relative survival rates of female breast cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by period of observation**



Ob začetku opazovanega obdobja, leta 1963, je bilo zdravljenje bolnic z ozdravljivim rakom dojk (po izročilu) lokalno: radikalna operacija in včasih dodano obsevanje. Za zdravljenje bolnic z neozdravljivim rakom dojk so bili v rabi hormoni (aditivna in ablativna terapija) ter na novo (mono)kemoterapija.

Do začetka 70. let je polikemoterapija postala pravilo za zdravljenje bolnic z razsejanim rakom dojk; hormonsko zdravljenje se je umikalo v ozadje.

Sredi 70. let je zgodnje odkrivanje raka dojk obetalo spremembe v preživetju bolnic: ustanovljena sta bila centra za bolezni dojk v Mariboru in Ljubljani.

Konec 70. let so bili zdravniki vse bolj prepričani o smiselnosti dodatnega sistemskega zdravljenja - hormonskega in citostatskega; radikalno obsevanje se je ob radikalni operaciji pri operabilnem raku dojk zazdelo nepotrebno.

Sredi 80. let je dozorelo spoznanje, da je mogoče opustiti radikalno operacijo pri določenih bolnicah z ozdravljivim rakom dojk brez posebne škode v korist neradikalne operacije, če ji dodamo pooperativno obsevanje.

Leta 1990 je delovalo v Sloveniji pet centrov za bolezni dojk (za zgodnje odkrivanje raka dojk) in pripravljali so se novi. Spremembe v boljšem preživetju, ki se kažejo v prikazanih podatkih, velja pripisati zgodnejšemu odkrivanju raka dojk in uvedbi dodatnega sistemskega zdravljenja (56). Razlike v velikosti teh sprememb - v škodo starejših bolnic so razložljive z dejstvom, da novosti, ne samo v medicini, dosežejo starejše prebivalce težje kot mlajše. Točneje: centrov za bolezni dojk se je oprijela mlada (premlada?) in srednja populacija in dodatno sistemsko zdravljenje se je sprva zdelo nekoristno za starejše bolnice.

At the beginning of the observation period, in 1963, the treatment of female patients with curable breast cancer was traditionally local: radical surgery, sometimes combined with radical irradiation. The patients with incurable breast cancer were given hormonal therapy, as well as the new (mono)chemotherapy.

Up to the beginning of the 70's, chemotherapy became the rule in treating disseminated breast cancer, while hormonal therapy gradually became less important.

In the mid-70's, early detection of breast cancer seemed to bring about changes in the survival rate of patients with breast cancer: two centres for breast cancer were established in Ljubljana and Maribor.

At the end of the 70's, the physicians became more and more convinced of the effectiveness of adjuvant therapy - hormonal as well as cytostatic, whereas radical irradiation was considered superfluous in patients with radical mastectomy.

In the mid-80's, the conviction that, with some patients suffering from curable cancer, radical surgery was unnecessary, gained ground. Partial surgery, combined with post-operative irradiation was felt to be sufficient.

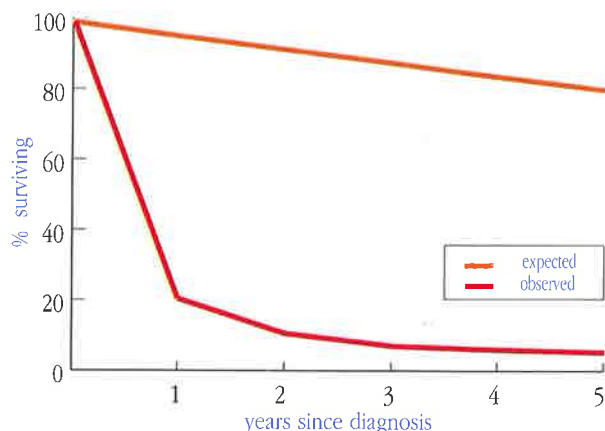
In 1990, there were five centers for the early detection of breast cancer in Slovenia, while other centers were in the process of being established.

The increase of survival rate, according to the available data, may be due to the increase of early diagnostic activity and to the introduction of adjuvant chemotherapy (56). The differences in survival rate in older patients may be explained by the fact that changes for the better - not only in medicine - are more popular with the younger generation. To be more explicit: the centers for the early detection of breast cancer have been used by the young (too young?) and the middle-aged, and the adjuvant chemotherapy had, at first, been deemed as inappropriate in older patients.

# POŽIRALNIK

## ESOPHAGUS

MKB 8 / ICD 8: 150



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z rakom požiralnika, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of esophageal cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom požiralnika 1850 moških in 367 žensk. Pri 300 bolnikih (14%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka požiralnika zmeroma naraščala pri moških, medtem ko je bila pri ženskah ustaljena (30,31,57). V letih 1963-67 je bila groba incidenčna mera 6,8/100.000 moških in 1,6/100.000 žensk, v letih 1988-90 pa 7,8/100.000 moških in 1,4/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 57% v letih 1963-67 na 88% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov je bila vseskozi stabilna (tabela 1), prav tako tudi razširjenost bolezni ob diagnozi (tabela 2).

In the period 1963-90, a total of 1850 male and 367 female patients with esophageal cancer were diagnosed in Slovenia. In 300 patients (14%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence increased moderately in males, while in females it was stabilised (30,31,57). In 1963-67 the crude incidence rate was 6.8/100,000 males and 1.6/100,000 females; in 1988-90 it was 7.8/100,000 males and 1.4/100,000 females. The percentage of microscopically confirmed cases increased from 57% in 1963-67 to 88% in 1988-90. The age distribution was rather stable (Table 1) and so was the stage distribution (Table 2).

TABELA 1: Požiralnik. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Esophagus. Patients included in the analysis by sex, age and period of observation.

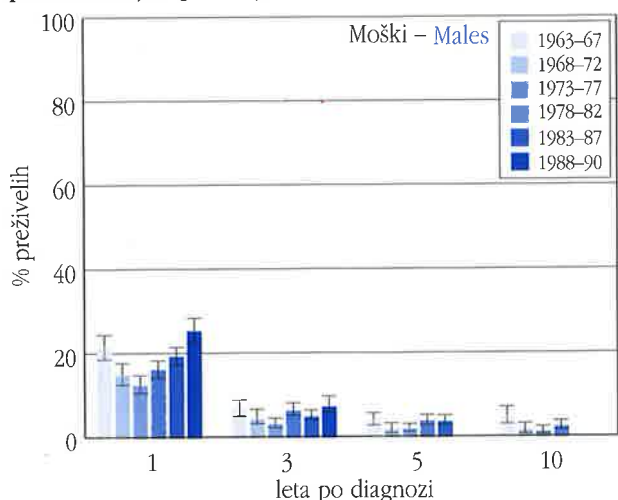
Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
Males 1963-67	224	0.0	2.7	10.3	41.1	34.4	11.6
1968-72	214	0.0	4.7	9.3	35.5	40.7	9.8
1973-77	269	0.0	4.1	20.1	27.5	34.2	14.1
1978-82	335	0.0	2.4	26.0	25.4	32.8	13.4
1983-87	369	0.0	4.9	26.3	30.4	22.0	16.5
1988-90	213	0.0	5.2	20.2	40.8	16.4	17.4
1963-90	1624	0.0	3.9	20.0	32.4	29.7	14.0
Females 1963-67	48	0.0	0.0	12.5	18.8	45.8	22.9
1968-72	46	0.0	0.0	2.2	21.7	45.7	30.4
1973-77	56	0.0	0.0	5.4	23.2	37.5	33.9
1978-82	52	0.0	1.9	11.5	17.3	46.2	23.1
1983-87	54	0.0	0.0	3.7	29.6	33.3	33.3
1988-90	37	0.0	0.0	21.6	18.9	21.6	37.8
1963-90	293	0.0	0.3	8.9	21.8	38.9	30.0

TABELA 2: Požiralnik. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

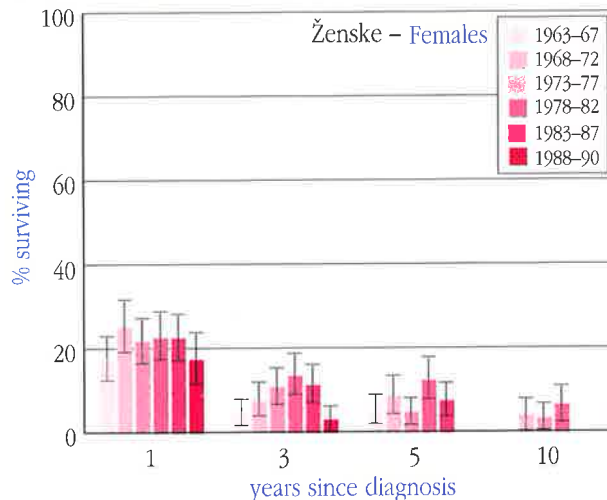
TABLE 2: Esophagus. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
Males 1963-67	224	-	-	-	-
1968-72	214	43.2	26.8	13.1	16.4
1973-77	269	45.0	27.5	18.2	9.3
1978-82	335	34.9	35.2	16.7	13.1
1983-87	369	31.4	37.9	18.2	12.5
1988-90	213	30.5	40.4	18.3	10.8
1963-90	1624	36.5	34.0	17.1	12.4
Females 1963-67	48	-	-	-	-
1968-72	46	45.7	26.1	13.0	15.2
1973-77	56	48.2	23.2	12.5	16.1
1978-82	52	42.3	19.2	25.0	13.5
1983-87	54	31.5	29.6	20.4	18.5
1988-90	37	40.5	29.7	8.1	21.6
1963-90	293	41.6	25.3	16.3	16.7

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom požiralnika zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of esophageal cancer patients diagnosed in the period 1963 – 90 by sex and period of observation.



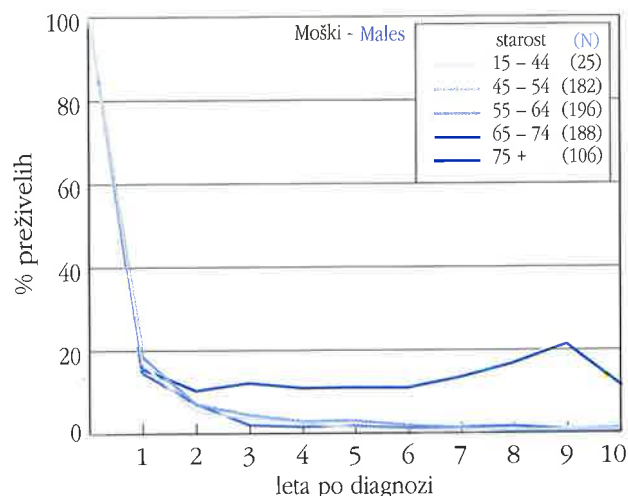
**TABELA 3:** Požiralnik. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Esophagus. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	20.64	5.96	3.21	2.75	16.67	4.17	4.17	0.00	21.55	6.84	4.10	4.85	17.40	4.78	5.31	0.00
1968-72	14.29	3.94	1.48	0.99	23.91	6.52	6.52	2.17	14.95	4.56	1.91	1.74	25.18	7.67	8.66	4.10
1973-77	11.99	2.80	1.60	0.80	20.72	9.42	3.77	1.88	12.53	3.22	2.03	1.35	21.73	10.92	4.88	3.40
1978-82	15.54	5.59	3.11	1.55	21.57	11.77	9.80	3.92	16.22	6.39	3.91	2.57	22.59	13.53	12.45	6.60
1983-87	18.57	4.43	3.05		21.50	9.77	5.86		19.33	5.02	3.77		22.53	11.36	7.62	
1988-90	24.41	6.57			16.67	2.78			25.30	7.35			17.46	3.20		

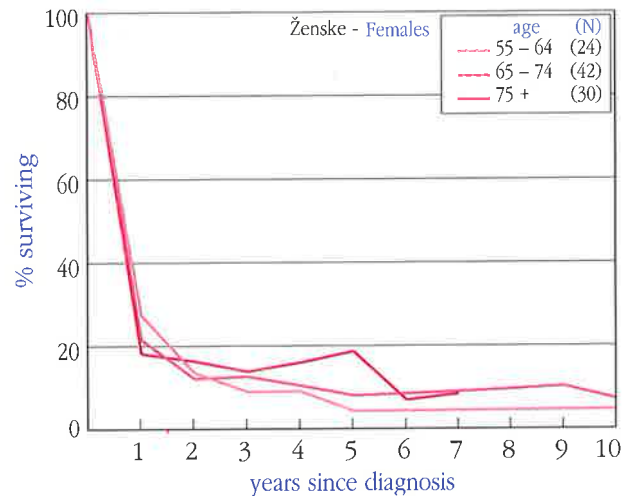
Rak požiralnika zgodaj lokalno napreduje, kmalu se pojavijo oddaljeni zasevki. V zdravljenju je na prvem mestu operacija, ki je izvedljiva le pri manjšem številu bolnikov. Bolnike, ki jih ne moremo operirati, zdravimo z obsevanjem ali s kemoterapijo ali s kombinacijo obojega. Naraščanje odstotka mikroskopsko potrjenih rakov je verjetno posledica uvedbe fleksibilnih endoskopov in pogostejših endoskopij v večih

Esophageal cancer shows a tendency towards rapid local as well as distant spread. Surgery (resection) is the treatment of choice, but it is feasible only in a small number of patients. Non-operable patients are treated by irradiation and/or chemotherapy. The increasing rate of microscopically verified cancers is probably associated with the use of flexible endoscopes and more frequent endoscopies in major diagnostic

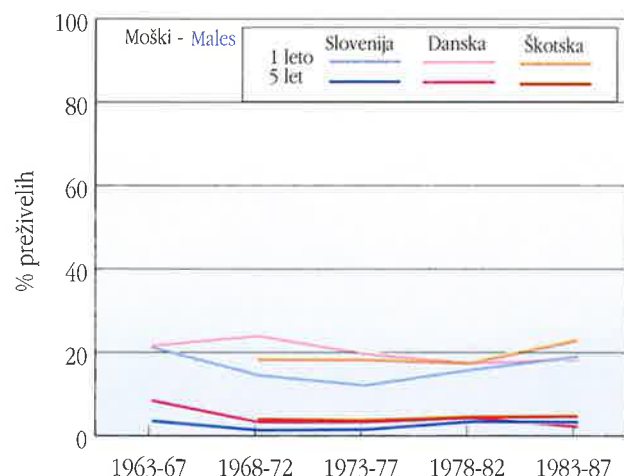
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom požiralnika zbolelih v letih 1978 – 87 po spolu in starosti.



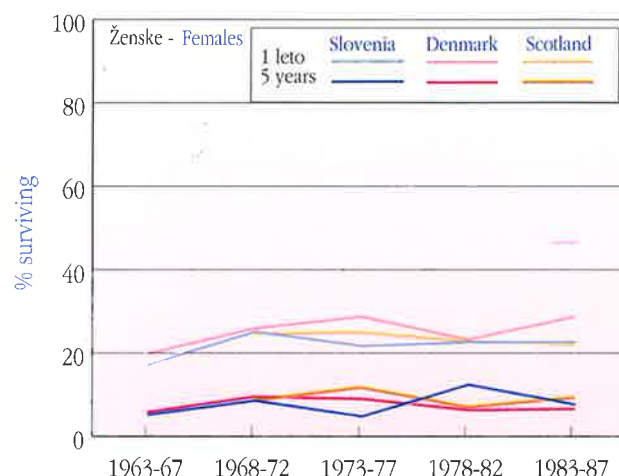
**FIGURE 3:** Relative ten-year survival of esophageal cancer patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom požiralnika, zbolelih v letih 1963-87, v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of esophageal cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



diagnostičnih centrih v Sloveniji. Eno leto je preživel okoli 20% bolnikov in le polovico njih dve leti. Vzrok je v dejstvu, da bolniki s težavami v požiralniku pridejo kasno k zdravniku, pa tudi sicer je med njimi veliko dolgoletnih kadilcev in uživalcev alkoholnih pijač, kar skupaj s starostjo in pridruženimi boleznimi povzroči manjšo skrb za zdravje. Napredovali rak, pridružene bolezni in starost bolnikov pogosto preprečujejo dokončanje začete zdravljenja, ki je zaradi teh vzrokov največkrat le paliativno.

Pri moških so odstotki enoletnega preživetja večji pri bolnikih, ki so se začeli zdraviti v letih 1978 do 1990 kot pri tistih, ki so se zdravili v letih 1973 do 1977 (slika 2, tabela 3). To je najverjetneje posledica boljšega posamičnega ali kombiniranega zdravljenja (operacija, obsevanje, kemoterapija) ter boljše oskrbe med zdravljenjem v zadnjem obdobju (58,59,60). S takim zdravljenjem kljub vsemu nismo uspeli povečati odstotka petletnega relativnega preživetja.

Ženske z rakom požiralnika so v nekoliko večjem odstotku preživele pet let kot moški in to predvsem po letu 1978.

centres of Slovenia. One-year survival is registered in about 20% of patients, but only half of these survive two years. The reason for such a poor outcome is attributable to the fact that the patients with esophageal disorders seek medical help rather late; in addition, a great number of them are persistent smokers and drinkers of alcohol; these factors - together with an advanced age and associated diseases - indicate their failure to care for their own health. Accordingly, advanced cancer, concomitant diseases and old age often render the completion of initiated treatment unfeasible; for the above-mentioned reasons, treatment is mostly palliative.

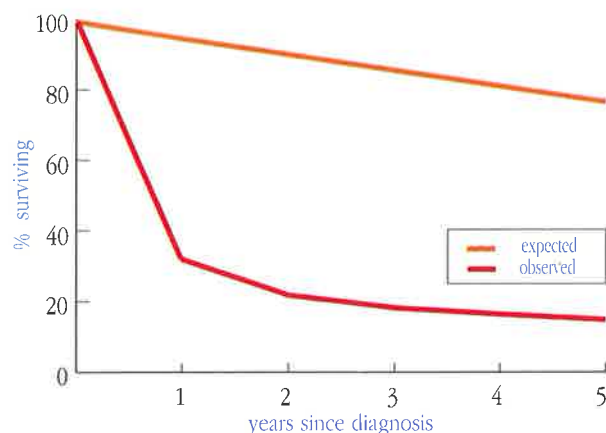
The survival rates are higher in patients whose treatment was started in the period 1978-1990 than in those treated in the years 1973-1977 (Figure 2, Table 3). This can probably be regarded as a result of the combined treatment approach (surgery, irradiation, chemotherapy) practised in the latter period (58, 59, 60). Such treatment, however, failed to increase the relative five-year survival rates.

Female esophageal cancer patients survived five years at a slightly higher percentage than male patients, the difference being particularly evident after the year 1978.

# ŽELODEC

## STOMACH

MKB 8 / ICD 8: 151



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z želodčnim rakom, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five-year survival of stomach cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za želodčnim rakom 10043 moških in 6891 žensk. Pri 2709 bolnikih (16%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca želodčnega raka pri obeh spolih upadala, padec je bil strmejši v 60. in 70. letih kot kasneje (30,31). V letih 1963-67 je bila groba incidenčna mera 46,8/100.000 moških in 30,2/100.000 žensk, v letih 1988-90 pa 33,7/100.000 moških in 20,6/100.000 žensk. Odstotek mikroskopsko potrjenih primerov raka se je povečal z 58% v letih 1963-67 na 87% v letih 1988-90.

Starostna porazdelitev v analizo vključenih bolnikov se je spreminjala (tabela 1). Odstotek bolnikov v najstarejši starostni skupini se je s časom povečal pri obeh spolih. Tudi ocena razširjenosti bolezni ob diagnozi se je spreminjala (tabela 2).

In the period 1963-90 a total of 10043 male and 6891 female patients with stomach cancer were diagnosed in Slovenia. In 2709 patients (16%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period, the incidence of stomach cancer decreased in both sexes; the decrease was steeper in the 60's and 70's than in the 80's (30,31). In the period 1963-67 the crude incidence rate was 46.8/100,000 males and 30.2/100,000 females; in 1988-90 it was 33.7/100,000 males and 20.6/100,000 females. The percentage of microscopically confirmed cases increased from 58% in 1963-67 to 87% in 1988-90. The age distribution changed (Table 1). The percentage of the eldest age group increased in both sexes. The extent of disease at diagnosis also changed (Table 2).

TABELA 1: Želodec. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Stomach. Patients included in the analysis by sex, age and period of observation.

	Period of observation	No.	Age at diagnosis (%)					
			-14	15-44	45-54	55-64	65-74	75+
Males	1963-67	1465	0.0	6.3	12.4	34.5	34.8	11.9
	1968-72	1473	0.0	6.8	10.0	30.0	40.7	12.5
	1973-77	1712	0.0	6.7	13.8	23.4	37.6	18.5
	1978-82	1619	0.1	5.2	14.9	19.8	38.7	21.3
	1983-87	1385	0.0	5.2	13.6	26.3	30.5	24.5
	1988-90	891	0.0	4.4	12.2	31.1	27.5	24.8
	1963-90	8545	0.0	5.9	12.9	27.0	35.7	18.5
Females	1963-67	964	0.0	7.0	9.4	26.2	38.6	18.8
	1968-72	1020	0.0	6.6	9.0	24.9	37.0	22.5
	1973-77	1090	0.0	5.4	10.8	18.6	37.3	27.8
	1978-82	1016	0.0	5.6	10.9	16.6	33.4	33.5
	1983-87	1033	0.0	6.6	10.0	19.8	25.8	37.9
	1988-90	557	0.0	6.8	10.4	17.1	24.1	41.7
	1963-90	5680	0.0	6.3	10.1	20.8	33.4	29.5

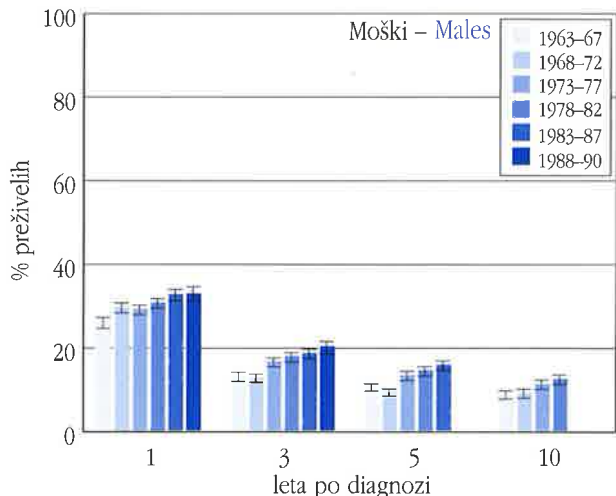
TABELA 2: Želodec. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

TABLE 2: Stomach. Patients included in the analysis by sex, extent of disease and period of observation.

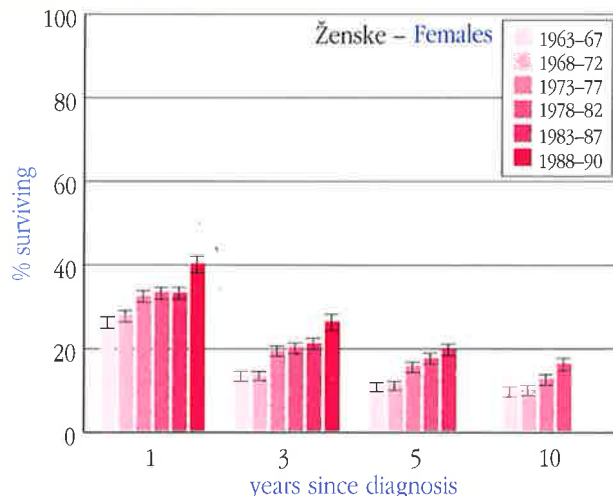
	Period of observation	No.	Extent of disease (%)			
			Localized	Regional	Distant	Unknown
Males	1963-67	1465	-	-	-	-
	1968-72	1473	23.4	31.2	27.2	18.2
	1973-77	1712	31.8	22.5	33.4	12.3
	1978-82	1619	27.9	31.0	29.4	11.7
	1983-87	1385	26.6	30.8	30.0	12.6
	1988-90	891	20.7	31.9	34.9	12.6
	1963-90	8545	26.7	29.0	30.7	13.5
Females	1963-67	964	-	-	-	-
	1968-72	1020	16.2	28.1	31.2	24.5
	1973-77	1090	27.2	21.7	32.9	18.2
	1978-82	1016	25.0	28.0	32.7	14.4
	1983-87	1033	22.7	26.7	33.3	17.3
	1988-90	557	23.0	31.1	27.5	18.5
	1963-90	5680	22.8	26.6	31.9	18.6



**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z želodčnim rakom zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of stomach cancer patients diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Želodec. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Stomach. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	24.90	11.36	8.26	4.99	25.12	11.93	8.76	6.12	25.98	13.03	10.55	8.75	26.02	13.35	10.70	9.70
1968-72	27.91	10.85	7.10	5.03	26.45	11.72	8.90	6.21	29.33	12.66	9.27	9.01	27.51	13.26	11.03	9.98
1973-77	27.42	14.06	10.09	6.13	30.58	16.72	12.23	7.45	28.84	16.45	13.23	11.08	31.90	19.08	15.38	12.35
1978-82	28.86	15.09	10.92	6.75	31.55	17.43	13.76	9.55	30.36	17.67	14.37	12.34	32.88	19.85	17.29	15.97
1983-87	30.67	15.64	11.84	-	31.33	18.12	15.25	-	32.28	18.34	15.59	-	32.72	20.78	19.38	-
1988-90	30.90	17.14	-	-	37.89	22.50	-	-	32.43	19.93	-	-	39.65	25.96	-	-

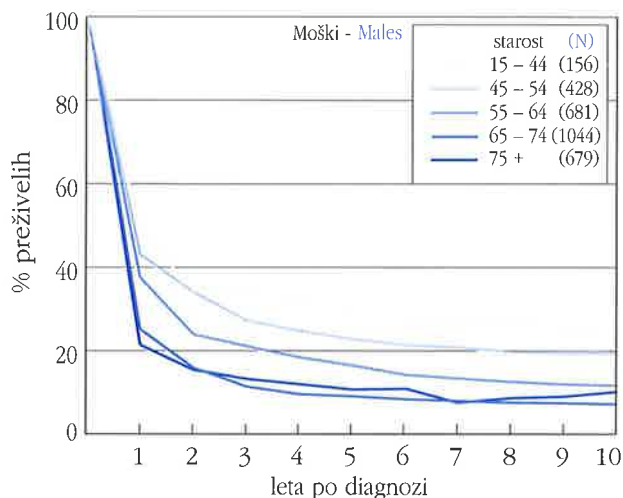
V zadnjih obdobjih so manj primerov opredelili kot lokalizirano bolezen; verjetno zaradi natančnejše zamejitve bolezni z rutinsko uporabo ultrazvoka, računalniške tomografije ter boljšega določanja pTNM stadija.

Odstotek eno- in petletnega relativnega preživetja se je postopoma povečeval (slika 2, tabela 3), najbolj se je povečal

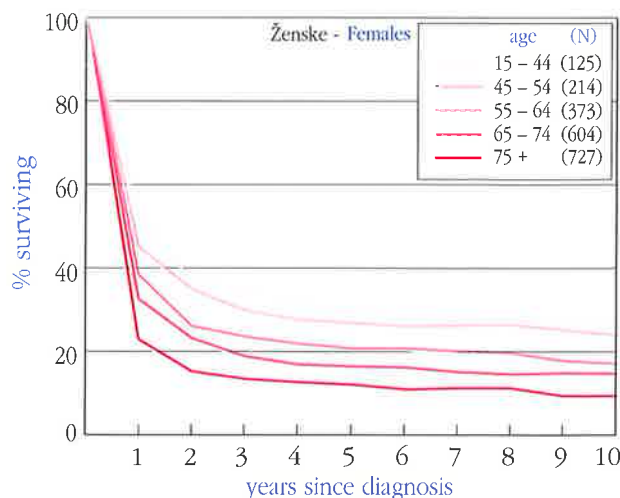
In the last periods of observation fewer cases were classified as localised, most probably due to better staging by means of routine ultrasound examination and/or computerised tomography, and to better pTNM staging.

The relative one- and five-year survival rate in both sexes improved moderately with time (Figure 2, Table 3); the

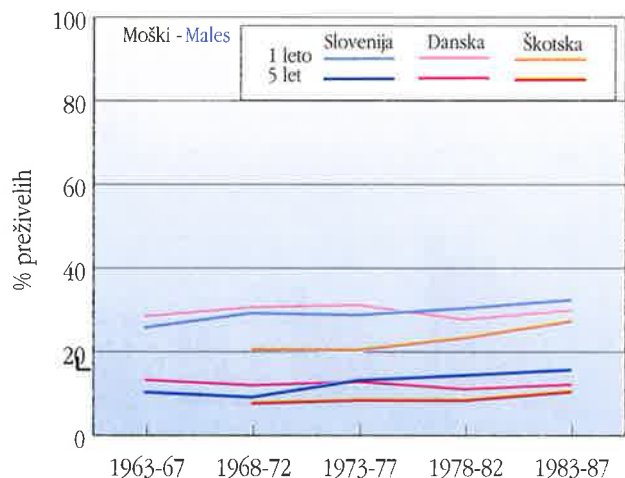
**SLIKA 3:** Relativno desetletno preživetje bolnikov z želodčnim rakom zbolelih v letih 1978 – 87 po spolu in starosti.



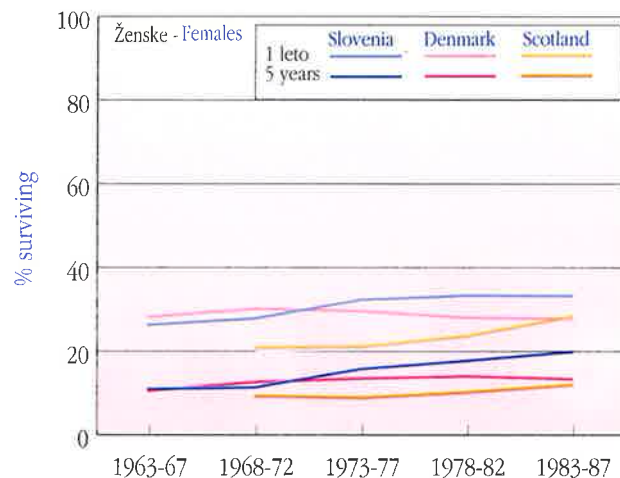
**FIGURE 3:** Relative ten-year survival of stomach cancer patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z želodčnim rakom, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of stomach cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



v letih 1973-77. Pri mlajših bolnikih je bil za približno 20% večji kot pri starejših (slika 3).

Podobno kot drugod v Evropi tudi v Sloveniji ni organiziranega presejanja za želodčnega raka. V 70. letih so ustanovili v Sloveniji več endoskopskih centrov. Fiberoptična endoskopija je v veliki meri nadomestila rentgenske preiskave želodca. Omogočila je biopsijo vidnih sprememb želodčne stene in s tem večjo zanesljivost diagnoze. Pri večini bolnikov je diagnoza histološko potrjena pred operacijo.

V opazovanem obdobju 1963-90 so želodčnega raka v Sloveniji rutinsko zdravili le z operacijo. V Kliničnem centru v Ljubljani, kjer se zdravi ena tretjina bolnikov z želodčnim rakom, je od začetka 80. let dalje operativni poseg, subtotalna ali totalna resekcija želodca, odvisen od histološkega tipa raka (uporabljajo histološko klasifikacijo po Lauren) (61,62,63). Limfadenektomijo (D1) so pričeli uvajati leta 1980, sistematično limfadenektomijo (D2) pa rutinsko od leta 1986 dalje. Preostali dve tretjini bolnikov se zdravita v 9 regionalnih bolnišnicah Slovenije. Tam je vrsta operacije največkrat subtotalna resekcija želodca, operativna tehnika se ni pomembneje spremenila.

Izboljšanje preživetja v Sloveniji si razlagamo z natančnejšo diagnostiko, boljšo operativno tehniko z uporabo spenjalnika, boljše izurjenimi kirurgi, boljše vodeno pred- in pooperativno oskrbo bolnikov ter z operativnim zdravljenjem večjega števila, tudi rizičnih in starejših bolnikov.

increase in the rates was highest in the period 1973-77. In relation to age at diagnosis the relative survival rate was higher by about 20% in younger patients of both sexes (Figure 3).

As elsewhere in Europe, so too in Slovenia there is no organized mass screening for gastric cancer. A number of endoscopic centers were established in Slovenia in the 70's. Radiological examinations of the stomach were largely replaced by fiberoptic endoscopy. The latter method has enabled biopsy of visible lesions in the stomach wall, thus improving the reliability of diagnosis. In the majority of patients the diagnosis is obtained on surgery.

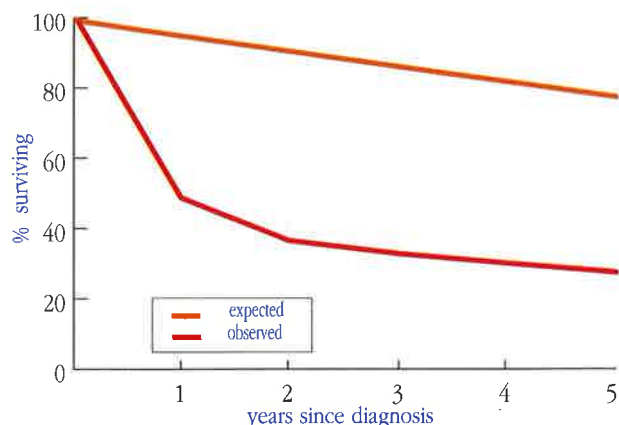
In the observed period 1963-90, the routine treatment for gastric cancer in Slovenia consisted of surgery alone. At the Medical Center in Ljubljana, where one third of all gastric cancer patients are treated, since the beginning of the 80's the extent of surgery - either subtotal or total resection - has depended on the histological type of cancer (according to the histological classification by Lauren) (61,62,63). Lymphadenectomy (D1) was introduced in 1980, but the method has been used routinely and systematically (D2) only since 1986. The remaining two thirds of gastric cancer patients are treated in nine regional hospitals in Slovenia. The operative technique practised there has not essentially changed, the most frequently performed procedure being subtotal resection of the stomach.

The improved survival of gastric cancer patients in Slovenia can be explained by more accurate diagnosis, advanced surgical techniques with use of staplers and adequately trained surgeons, better pre- and postoperative patient care, and by the fact that a larger number of patients - also those at risk and older ones - are treated surgically.

## DEBELO ČREVO

## COLON

MKB 8 / ICD 8: 153



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z rakom debelega črevesa, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of colon cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom debelega črevesa 2475 moških in 3081 žensk. Pri 542 bolnikih (10%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka debelega črevesa naraščala pri obeh spolih (30,31,64). V letih 1963-67 je bila groba incidenčna mera 6/100.000 moških in 7,1/100.000 žensk, v letih 1988-90 pa 17,5/100.000 moških in 16,4/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 64% v letih 1963-67 na 86% v letih 1988-90.

Starostna porazdelitev v analizo vključenih bolnikov se je spreminjala (tabela 1). Odstotek bolnikov v najstarejši starostni skupini je bil večji v vsakem časovnem obdobju pri obeh spolih. Tudi ocena razširjenosti bolezni ob diagnozi se je spreminjala (tabela 2).

TABELA 1: Debelo črevo. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Colon. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
<b>Males</b>								
1963-67	212	0.0	12.3	18.9	25.5	28.3	15.1	
1968-72	238	0.4	14.3	11.3	26.1	31.1	16.8	
1973-77	341	0.3	11.4	13.5	24.0	32.3	18.5	
1978-82	440	0.7	8.0	16.1	18.6	35.5	21.1	
1983-87	557	0.4	5.6	12.9	22.6	33.8	24.8	
1988-90	468	0.2	7.1	13.0	25.6	27.1	26.9	
1963-90	2256	0.4	8.8	14.1	23.3	31.7	21.8	
<b>Females</b>								
1963-67	270	0.0	10.4	12.6	24.1	34.8	18.1	
1968-72	339	0.0	6.2	11.8	26.3	36.6	19.2	
1973-77	434	0.0	7.1	11.8	18.9	35.7	26.5	
1978-82	572	0.0	4.7	11.5	18.9	35.1	29.7	
1983-87	670	0.1	4.2	10.4	24.5	31.3	29.4	
1988-90	473	0.0	5.9	8.9	20.3	27.5	37.4	
1963-90	2758	0.0	5.9	11.0	21.9	33.1	28.0	

In the period 1963-90 a total of 2475 male and 3081 female patients with colon cancer were diagnosed in Slovenia. In 542 patients (10%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence steeply increased in both sexes (30,31,64). In the period 1963-67 the crude rate was 6/100,000 males and 7.1/100,000 females; in 1988-90 it was 17.5/100,000 males and 16.4/100,000 females. The percentage of microscopically confirmed cases increased from 64% in 1963-67 to 86% in 1988-90.

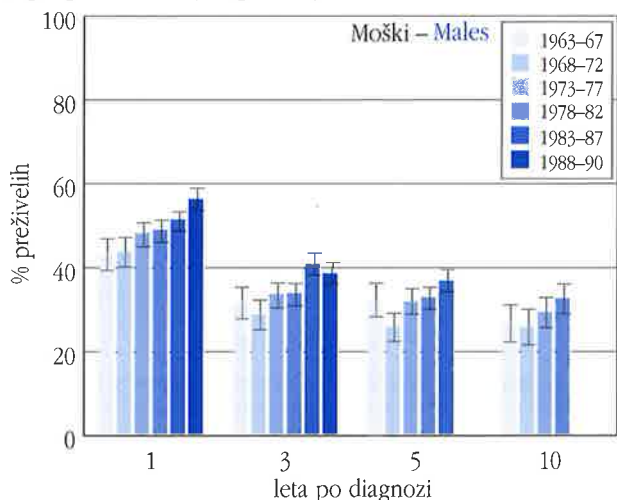
The age distribution changed in both sexes. The percentage in the eldest age group was higher in each subsequent time-period (Table 1). The extent of disease at diagnosis was also less favourable in each subsequent time period in both sexes (Table 2).

TABELA 2: Debelo črevo. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

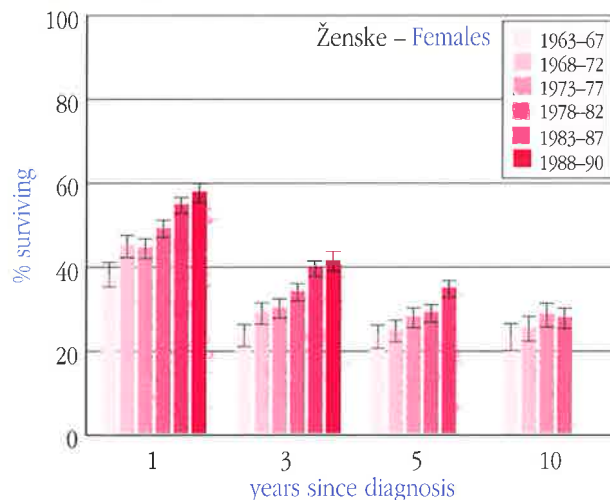
TABLE 2: Colon. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
<b>Males</b>					
1963-67	212	-	-	-	-
1968-72	238	26.5	30.3	30.7	12.6
1973-77	341	37.8	21.1	32.0	8.2
1978-82	440	29.8	32.7	30.9	6.6
1983-87	557	17.6	45.8	28.0	8.6
1988-90	468	12.8	50.0	27.8	9.4
1963-90	2256	23.5	38.0	29.5	8.8
<b>Females</b>					
1963-67	270	-	-	-	-
1968-72	339	29.2	30.7	29.2	11.0
1973-77	434	37.6	20.0	31.8	10.6
1978-82	572	26.7	32.2	29.9	11.2
1983-87	670	20.9	44.5	25.8	8.8
1988-90	473	13.7	49.0	26.8	10.4
1963-90	2758	24.9	36.4	28.5	10.3

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom debelega črevesa zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with colon cancer diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Debelo črevo. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Colon. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	40.78	27.07	25.10	15.75	36.60	21.03	19.12	14.91	42.60	31.06	31.88	26.51	37.87	23.44	23.16	22.95
1968-72	41.10	24.40	19.70	14.85	42.73	25.46	20.00	16.06	43.13	28.34	25.41	25.43	44.44	28.63	24.46	24.91
1973-77	45.27	28.57	24.36	16.84	42.16	26.28	22.16	17.51	47.45	33.05	31.26	28.81	43.85	29.76	27.48	28.17
1978-82	45.89	28.52	24.78	18.00	46.48	29.56	22.97	16.71	48.20	33.23	32.29	32.00	48.37	33.52	28.61	27.38
1983-87	48.11	34.30	27.37		52.10	34.89	28.09		50.67	40.34	36.21		54.03	39.13	34.36	
1988-90	52.78	32.48			54.63	35.80			55.50	37.95			57.00	40.92		

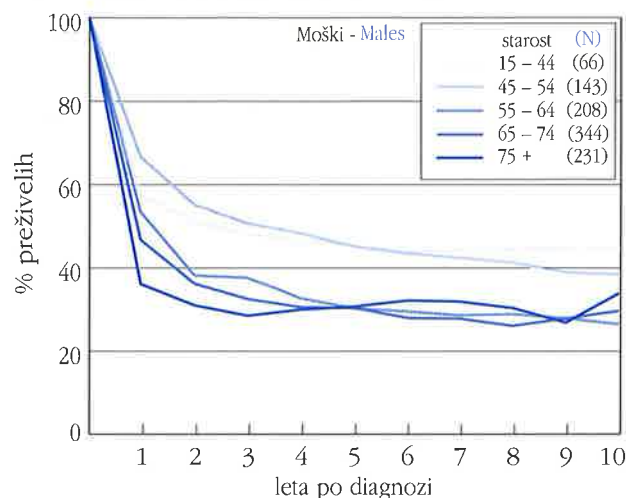
Nakazano je manjšanje odstotka lokalizirane in večanje odstotka regionalno razširjene bolezni, kar je razložljivo z natančnejšim zamejevanjem.

Odstotek petletnega relativnega preživetja se je postopoma večal, pri moških nakazano, pri ženskah statistično značilno (slika 2, tabela 3). Pri mlajših bolnikih je bil odstotek petlet-

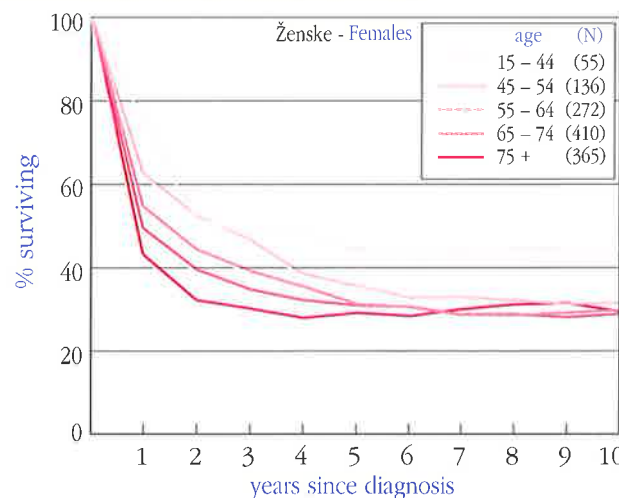
A tendency towards decrease of the localized stage on account of the regional is indicated. This can be explained by better staging.

The relative five-year survival rate gradually increased (Figure 2, Table 3); in females this increase was statistically significant. In relation to age, the five-year survival rate was better

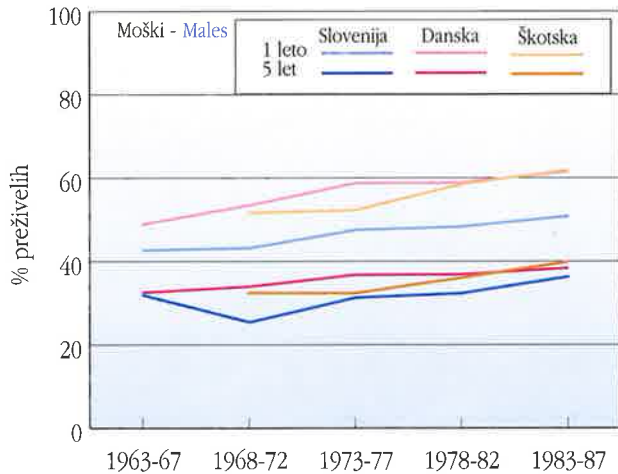
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom debelega črevesa zbolelih v letih 1978 – 87 po spolu in starosti.



**FIGURE 3:** Relative ten-year survival of colon cancer patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom debelega črevesa, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem\* po spolu in obdobjih opazovanja.



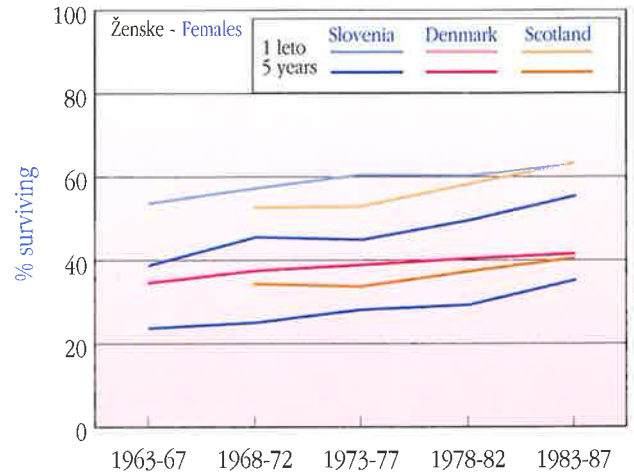
\* za Škotsko so podatki za raka debelega črevesa in danke navedeni skupaj.

nega preživetja za 10% večji kot pri starejših (pri moških do 54. leta starosti, pri ženskah pa do 44. leta starosti) (slika 3). Pri raku debelega črevesa je v 80. letih kolonoskopija nadomestila radiološke preiskave. Kmalu zatem so v endoskopskih centrih v Sloveniji uvedli tudi endoskopsko polipektomijo s spremljanjem bolnikov.

Poglaviten način zdravljenja v opazovanem 28-letnem obdobju je bila radikalna operacija. Limfadenektomija ni bila v rutinski rabi. Dodatno kemo- in imunoterapijo smo uvedli po letu 1990 medtem, ko je bilo z obsevanjem zdravljeno le manjše število bolnikov v regionalni razširitvi.

Zmerno izboljšanje preživetja bolnikov si lahko razlagamo z izboljšano diagnostiko, z natančnejšim zamejevanjem bolezni in ločeno obravnavo raka debelega črevesa od raka danke, z izboljšanjem operativne tehnike z uporabo spenjalnika, večjo spretnostjo kirurgov in boljšim podpornim zdravljenjem (64).

**Figure 4:** One- and five-year relative survival rates of colon cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland\*, by sex and period of observation



\* Scotland does not provide separate data for colon and rectal cancer.

by 10% in younger men till the age of 54, while in females it was better till the age of 44 only (Figure 3).

In the 80's, colonoscopy replaced radiological examination in colon cancer. Soon after, endoscopic polypectomies with follow-up of patients was introduced in the endoscopic centers throughout Slovenia.

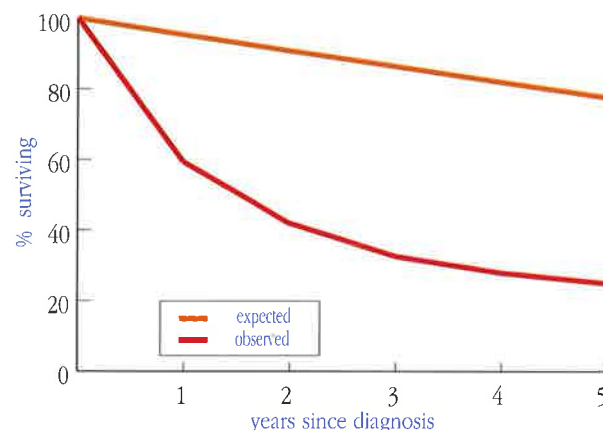
In the observed 28-year period radical surgery represented the main treatment; lymphadenectomy was not routinely used. Adjuvant chemo- and immunotherapy has come into use since 1990, whereas radiation therapy has been applied only in a limited number of patients with stage III of the disease.

The moderate increase in patients' survival could be attributed to improved diagnosis, better staging procedures and selective workup of colon and rectal cancers respectively, as well as to advanced surgical techniques, promoted by the use of stapler, adequately trained surgeons and more effective adjuvant therapy (64).

# DANKA

## RECTUM

MKB 8 / ICD 8: 154



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z rakom danke, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of rectal cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom danke 3641 moških in 3363 žensk. Pri 433 bolnikih (6%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka danke naraščala pri obeh spolih, strmeje v 60. in 70. letih (30,31,64). V letih 1963-67 je bila groba incidenčna mera 9,7/100.000 moških in 9/100.000 žensk, v letih 1988-90 pa 19,3/100.000 moških in 16,3/100.000 žensk. Odstotek mikroskopsko potrjenih primerov raka se je povečal z 71% v letih 1963-67 na 91% v letih 1988-90.

Starostna porazdelitev v analizo vključenih bolnikov se je spreminjala (tabela 1). Odstotek bolnikov v najstarejši starostni skupini je bil večji v vsakem naslednjem časovnem obdobju. Tudi ocena razširjenosti bolezni ob diagnozi se je spreminjala (tabela 2). Nakazano je manjšanje odstotka lokalizirane in večanje odstotka regionalno razširjene bolezni, kar je razložljivo z natančnejšim zamejevanjem.

**TABELA 1:** Danka. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

**TABLE 1:** Rectum. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b> 1963-67	363	0.3	5.8	9.6	28.1	36.4	19.8
1968-72	499	0.2	6.4	11.2	30.9	37.3	14.0
1973-77	531	0.0	7.0	10.9	25.6	36.9	19.6
1978-82	705	0.0	5.4	13.9	19.9	36.9	24.0
1983-87	803	0.0	5.6	15.4	23.5	28.4	27.0
1988-90	523	0.0	4.8	13.6	32.7	23.3	25.6
1963-90	3424	0.1	5.8	12.9	26.1	32.8	22.4
<b>Females</b> 1963-67	359	0.0	10.0	12.3	31.2	32.0	14.5
1968-72	402	0.0	5.5	9.7	29.6	38.1	17.2
1973-77	551	0.0	6.7	13.2	21.6	39.7	18.7
1978-82	623	0.0	6.1	11.7	18.1	39.5	24.6
1983-87	746	0.0	5.6	9.7	22.9	31.1	30.7
1988-90	466	0.0	3.9	8.8	27.3	26.6	33.5
1963-90	3147	0.0	6.1	10.9	24.2	34.6	24.2

In the period 1963-90 a total of 3641 male and 3363 female patients with rectal cancer were diagnosed in Slovenia. In 433 patients (4%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence of rectal cancer increased in both sexes, the increase being steeper in the 60's and 70's than in the 80's (30,31,64). In 1963-67 the crude rate was 9.7/100,000 males and 9/100,000 females; in 1988-90 it was 19.3/100,000 males and 16.3/100,000 females. The percentage of microscopically confirmed cases increased from 71% in 1963-67 to 91% in 1988-90.

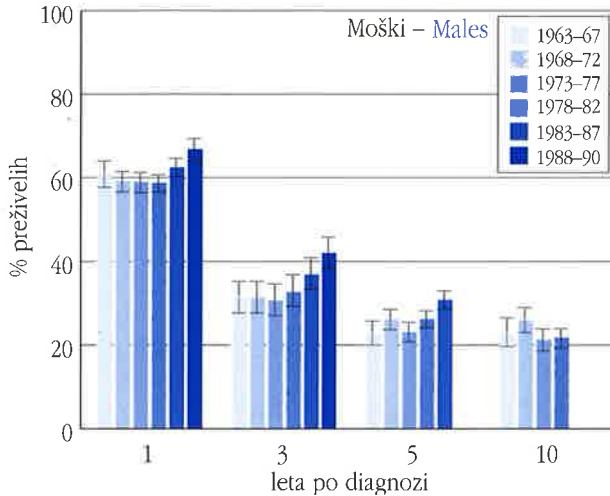
The age distribution changed (Table 1). The percentage of the eldest age group increased in both sexes in each subsequent time-period. The extent of disease at diagnosis changed in both sexes. Since 1973-77, fewer patients have been diagnosed in the so called localized stage because of better staging possibilities (Table 2).

**TABELA 2:** Danka. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

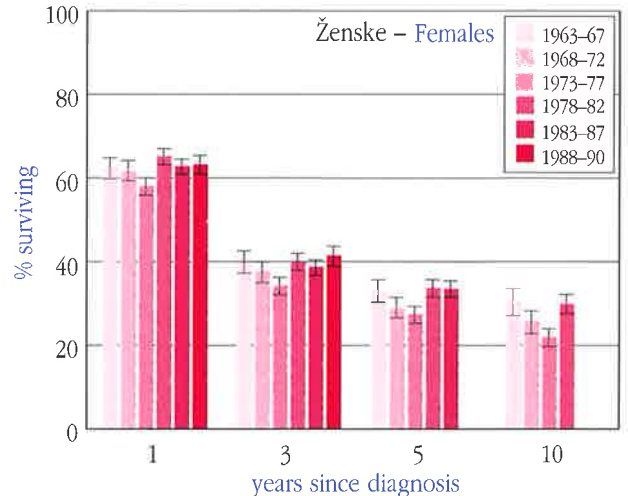
**TABLE 2:** Rectum. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
<b>Males</b> 1963-67	363	-	-	-	-
1968-72	499	37.7	23.9	25.9	11.3
1973-77	531	45.0	20.2	26.9	7.5
1978-82	705	32.5	33.3	26.5	7.7
1983-87	803	22.4	44.1	24.4	9.1
1988-90	523	16.4	48.4	24.9	10.3
1963-90	3424	30.1	34.9	25.7	9.1
<b>Females</b> 1963-67	359	-	-	-	-
1968-72	402	35.0	30.5	21.8	11.5
1973-77	551	42.8	21.2	27.0	8.7
1978-82	623	32.6	35.3	23.8	8.2
1983-87	746	23.9	43.6	20.9	11.7
1988-90	466	17.6	49.6	21.7	11.2
1963-90	3147	30.1	36.4	23.0	10.2

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom danke zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with rectal cancer diagnosed in the period 1963 – 90 by sex and period of observation.



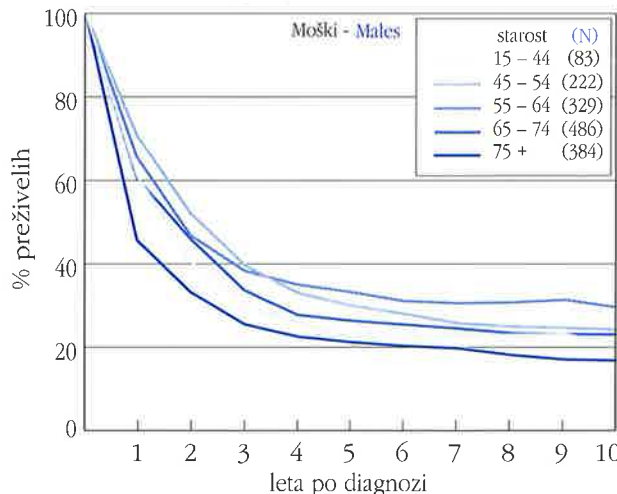
**TABELA 3:** Danke. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Rectum. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis	
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	57.47	26.48	16.90	11.79	59.94	35.88	27.62	20.50	60.61	31.35	22.72	22.66	61.78	39.51	32.73	30.07
1968-72	55.92	26.75	19.96	14.51	58.94	33.37	23.61	16.58	58.73	31.20	26.02	25.80	61.00	37.19	28.53	25.35
1973-77	55.62	25.97	17.44	11.63	55.52	30.42	22.53	14.27	58.56	30.47	22.97	21.16	57.42	33.81	27.10	21.58
1978-82	55.33	27.52	19.60	11.63	62.16	35.29	27.29	18.80	58.37	32.49	26.10	21.72	64.43	39.53	33.31	29.50
1983-87	58.85	31.11	23.12		59.65	33.73	26.52		62.04	36.66	30.66		62.14	38.29	33.05	
1988-90	63.29	36.05			60.13	36.21			66.35	41.76			62.54	40.95		

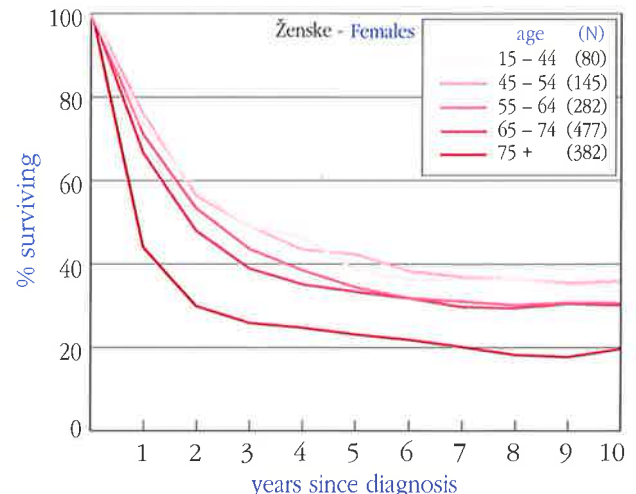
Odstotek petletnega relativnega preživetja se je pri moških statistično značilno povečal na 30% v letih 1983-87, pri ženskah pa na 33% v letih 1978-82 in se kasneje ni povečal (slika 2, tabela 3). Glede na starost so bile razlike v relativnem petletnem preživetju večje pri ženskah (okoli 20%) kot pri moških (okoli 15%) (slika 3).

The relative five-year survival rate in males improved significantly in the period 1983-87. In females it improved in the period 1978-82 and was stable afterwards (Figure 2, Table 3). In relation to age at diagnosis younger patients of both sexes survived better than patients in the eldest age group; the differences were bigger in females (Figure 3).

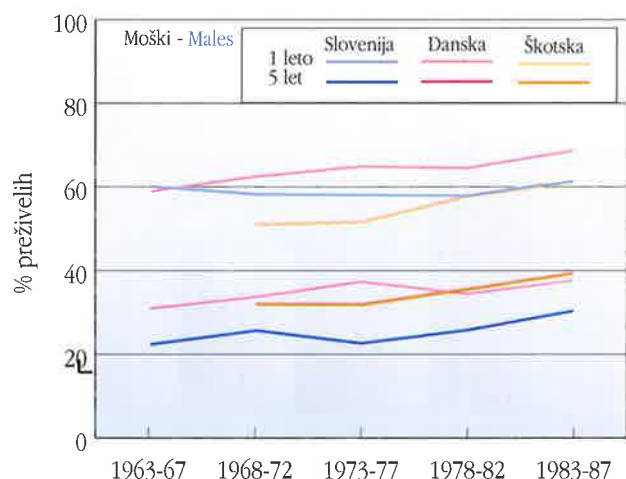
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom danke zbolelih v letih 1978 – 87 po spolu in starosti.



**FIGURE 3:** Relative ten-year survival of rectal cancer patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom danke, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem\* po spolu in obdobjih opazovanja.

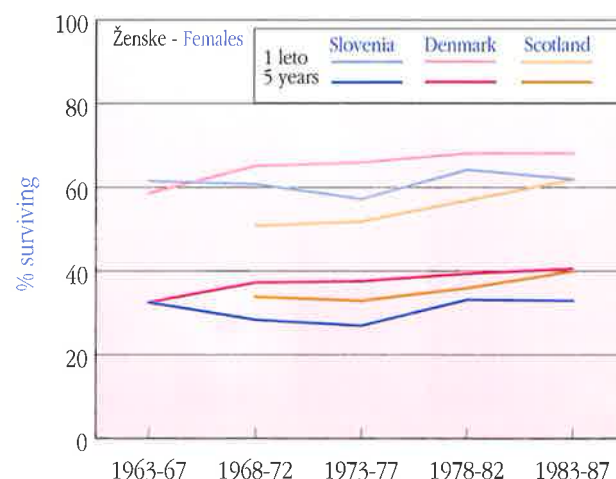


\* za Škotsko so podatki za raka debelega črevesa in danke navedeni skupaj.

Večina bolnikov je bila zdravljena z radikalno operacijo brez limfadenektomije. V opazovanem obdobju je bilo le manjše število bolnikov pooperativno obsevanih in zdravljenih s kemoterapijo. Po letu 1990 bolnikom z napredovalim rakom po operaciji sistematično dodajamo obsevanje ter kemo- in imunoterapijo.

Skromno izboljšanje petletnega preživetja bolnikov lahko sicer pripišemo izpopolnjeni operativni tehniki (konzervirajoča operacija z mikrokirurškim izrezom raka v danki v stadijih T1, T2 ali celo T3), večji izurjenosti kirurgov in izpopolnjenem pred- in pooperativnem podpornem zdravljenju. Večjega izboljšanja pa najverjetneje ni bilo zaradi velikega števila bolnikov z napredovalim rakom (64).

**Figure 4:** One- and five-year relative survival rates of rectal cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland\*, by sex and period of observation.



\* Scotland does not provide separate data for colon and rectal cancer.

The majority of patients were treated by radical surgery without lymphadenectomy. In the period under study, only a limited number of patients received postoperative irradiation and chemotherapy. Since 1990, however, patients with advanced cancer have been systematically receiving postoperative irradiation, chemo- and immunotherapy.

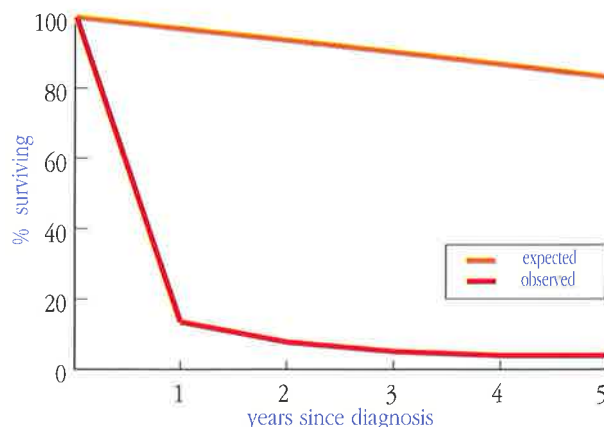
The minor increase in the 5-year survival of these patients could be ascribed to the improved surgical techniques (conservative surgery with microsurgical dissection of rectal cancer stage T1, T2 or even T3), the greater skill of the surgeons and the more effective pre- and postoperative supporting therapy. A more significant improvement in the survival results was not noted, probably due to a relatively large number of patients with advanced disease (64).



## JETRA

## LIVER

MKB 8 / ICD 8: 155



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z rakom jeter, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of liver cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom jeter 541 moških in 387 žensk. Pri 288 bolnikih (31 %) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

Zdi se, da je v opazovanem 28-letnem obdobju incidenca raka jeter naraščala, vendar je njen dvig zakrit zaradi strožjih meril pri opredeljevanju primarnega raka jeter v zadnjih treh časovnih obdobjih (30). V letih 1963-67 je bila groba incidenčna mera 2/100.000 moških in 1,9/100.000 žensk, v letih 1988-90 pa 3,2/100.000 moških in 1,6/100.000 žensk. Odstotek mikroskopsko potrjenih rakov se je povečal s 55% v letih 1963-67 na 92% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se ni bistveno spreminjala (tabela 1). Odstotek bolnikov v najstarejši starostni skupini se je povečal pri obeh spolih. Ocena razširjenosti bolezni ob diagnozi se je spreminjala tudi zaradi majhnega števila primerov (tabela 2).

TABELA 1: Jetra. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Liver. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b>							
1963-67	58	1.7	5.2	17.2	39.7	24.1	12.1
1968-72	51	0.0	5.9	11.8	37.3	39.2	5.9
1973-77	72	4.2	4.2	18.1	30.6	30.6	12.5
1978-82	43	7.0	4.7	16.3	30.2	37.2	4.7
1983-87	73	1.4	2.7	9.6	45.2	28.8	12.3
1988-90	65	3.1	6.2	12.3	35.4	26.2	16.9
1963-90	362	2.8	4.7	14.1	36.7	30.4	11.3
<b>Females</b>							
1963-67	60	1.7	6.7	11.7	26.7	33.3	20.0
1968-72	48	0.0	6.3	10.4	31.3	37.5	14.6
1973-77	40	2.5	2.5	5.0	22.5	42.5	25.0
1978-82	39	2.6	7.7	10.3	12.8	41.0	25.6
1983-87	51	2.0	7.8	7.8	17.6	45.1	19.6
1988-90	40	2.5	5.0	10.0	32.5	15.0	35.0
1963-90	278	1.8	6.1	9.4	24.1	36.0	22.7

In the period 1963-90 a total of 541 male and 387 female patients with primary liver cancer were diagnosed in Slovenia. In 288 patients (31%) cancer was diagnosed at death and they are not included in the analysis.

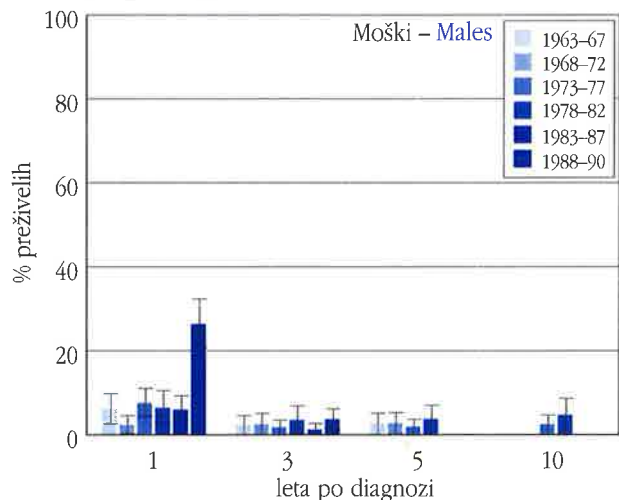
In this time-period the incidence of liver cancer was most probably increasing, but the increase was masked by more stringent criteria in defining primary liver cancer in the last three time-periods (30). In the period 1963-67, the crude incidence rate was 2/100,000 males and 1.9/100,000 females; in 1988-90 it was 3.2/100,000 males and 1.6/100,000 females. The percentage of microscopically confirmed cases increased from 55% in 1963-67 to 92% in 1988-90. The age distribution did not greatly change (Table 1). The percentage of the eldest age group increased in both sexes. The extent of disease at diagnosis varied due to the small number of cases (Table 2).

TABELA 2: Jetra. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

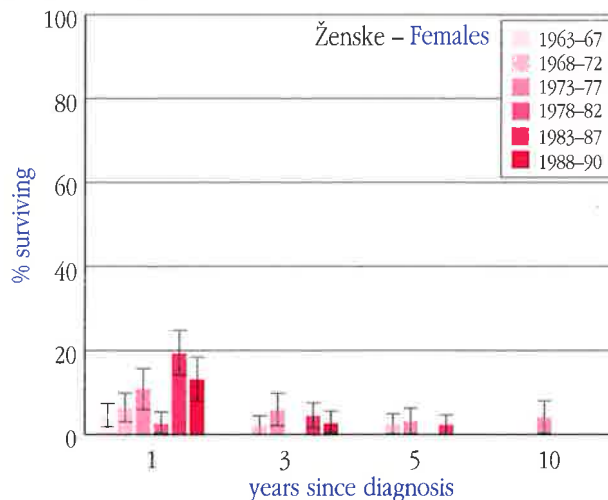
TABLE 2: Liver. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
<b>Males</b>					
1963-67	58	-	-	-	-
1968-72	51	9.8	21.6	47.1	21.6
1973-77	72	43.1	19.4	31.9	5.6
1978-82	43	32.6	7.0	51.2	9.3
1983-87	73	34.2	21.9	39.7	4.1
1988-90	65	43.1	21.5	24.6	10.8
1963-90	362	33.9	19.1	37.5	9.5
<b>Females</b>					
1963-67	60	-	-	-	-
1968-72	48	8.3	25.0	43.8	22.9
1973-77	40	27.5	22.5	47.5	2.5
1978-82	39	41.0	15.4	41.0	2.6
1983-87	51	29.4	29.4	33.3	7.8
1988-90	40	40.0	17.5	25.0	17.5
1963-90	278	28.4	22.5	38.1	11.0

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom jeter zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with liver cancer diagnosed in the period 1963 – 90 by sex and period of observation.



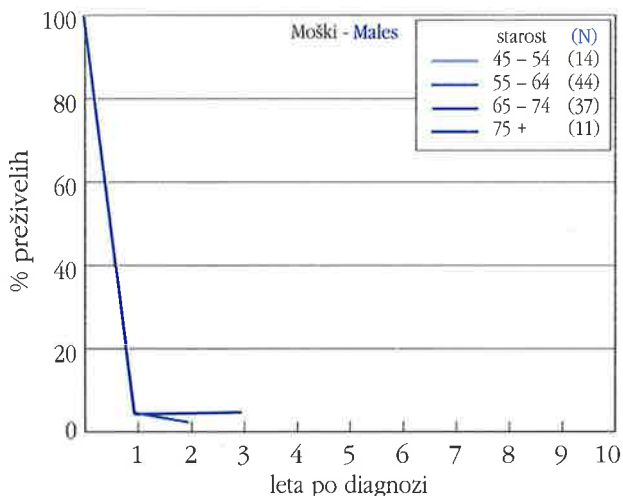
**TABELA 3:** Jetra. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Liver. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	5.77	1.92	1.92	0.00	4.59	0.00	0.00	0.00	6.01	2.19	2.41	0.00	4.75	0.00	0.00	0.00
1968-72	2.04	2.04	2.04	0.00	6.25	2.08	2.08	0.00	2.12	2.31	2.54	0.00	6.47	2.33	2.52	0.00
1973-77	7.04	1.41	1.41	1.41	10.53	5.26	2.63	2.63	7.35	1.61	1.76	2.28	10.93	5.93	3.24	4.16
1978-82	6.02	3.01	3.01	3.01	2.63	0.00	0.00	0.00	6.22	3.33	3.59	4.47	2.73	0.00	0.00	0.00
1983-87	5.56	0.93	0.00		18.81	4.18	2.09		5.76	1.04	0.00		19.34	4.57	2.45	
1988-90	25.00	3.13			12.82	2.56			25.93	3.51			13.21	2.82		

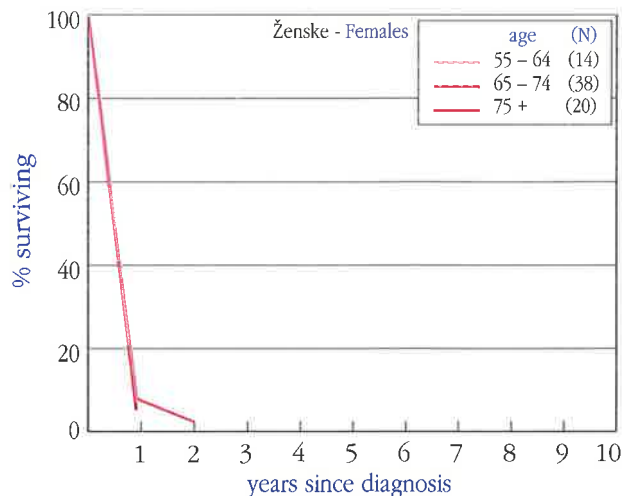
Odstotek relativnega enoletnega preživetja se je pri moških povečal v obdobju 1988-90, pri ženskah pa že prej. Odstotek tri- in petletnega preživetja se pri obeh spolih ni bistveno spreminjal, petletno preživetje je bilo manj kot 5% (slika 2, tabela 3). Glede na starost ni bilo pomembnejših razlik v preživetju (slika 3).

The relative one-year survival rate increased in males in the period 1988-90, while in females it increased earlier. The three-, and five-year survival rate in both sexes did not change (Fig. 2, Table 3). The five year relative survival was less than 5%. In relation to age there is no notable difference in survival (Fig.3).

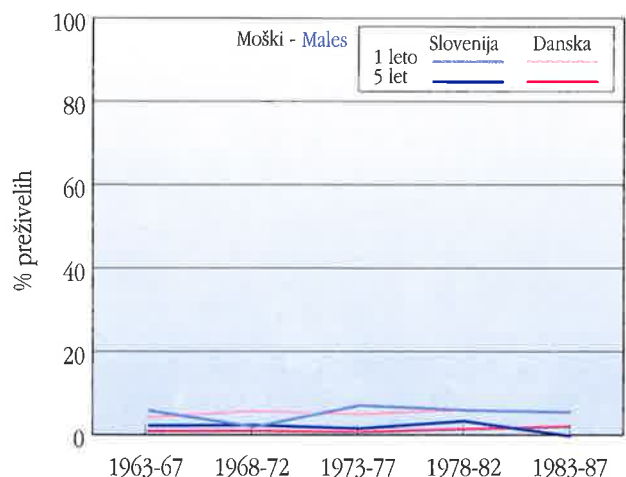
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom jeter zbolelih v letih 1978 – 87 po spolu in starosti.



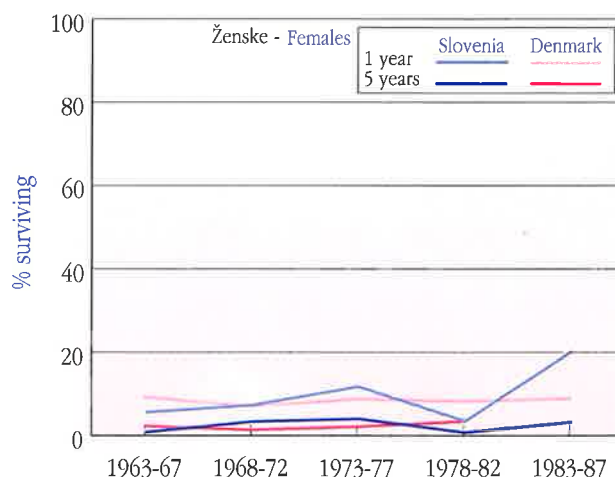
**FIGURE 3:** Relative ten-year survival of liver cancer patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom jeter, zbolelih v letih 1963-87 v Sloveniji in na Danskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of liver cancer patients, diagnosed in 1963-87 in Slovenia and Denmark, by sex and period of observation.



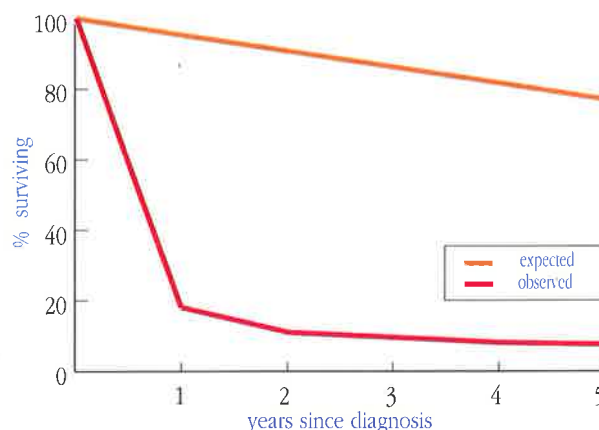
Najverjetnejši vzrok za povečanje odstotka enoletnega preživetja je zdravljenje z operacijo in kemoembolizacijo po letu 1985. Pred tem letom je bilo zdravljenje samo simptomatsko.

Most probably, the increase in one-year survival rates is attributable to the combined treatment with surgery and chemoembolisation, which was introduced in 1986. Before that, the treatment had been only symptomatic.

# ŽOLČNIK IN ŽOLČNI VODI

## GALL BLADDER AND BILE DUCTS

MKB 8 / ICD 8: 156



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z rakom žolčnika in žolčnih vodov zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five-year survival of gall bladder and bile ducts cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom žolčnika in žolčnih vodov 677 moških in 1913 žensk. Pri 484 bolnikih (19%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je bila incidenca raka žolčnika in žolčnih vodov ustaljena do leta 1977, kasneje se je znižala pri obeh spolih (30,31). V obdobju 1963-67 je bila groba incidenčna mera 3,4/100.000 moških in 7,4/100.000 žensk, v letih 1988-90 pa 2,6/100.000 moških in 7,6/100.000 žensk. Odstotek mikroskopsko potrjenih primerov raka se je povečal s 55% v letih 1963-67 na 81% v letih 1988-90.

Starostna porazdelitev v analizo vključenih bolnikov se je spremenila (tabela 1). Odstotek starejših bolnikov se je povečal. Spremenila se je tudi ocena razširjenosti bolezni ob diagnozi, in to pri obeh spolih, več je lokaliziranih rakov in manj rakov z oddaljenimi zasevki (tabela 2).

**TABELA 1:** Žolčnik in žolčni vodi. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

**TABLE 1:** Gall Bladder and Bile Ducts. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b>							
1963-67	89	0.0	1.1	7.9	36.0	39.3	15.7
1968-72	85	0.0	7.1	11.8	29.4	37.6	14.1
1973-77	92	0.0	0.0	5.4	16.3	53.3	25.0
1978-82	85	1.2	1.2	11.8	20.0	42.4	23.5
1983-87	105	0.0	3.8	9.5	28.6	28.6	29.5
1988-90	71	0.0	4.2	7.0	21.1	38.0	29.6
1963-90	527	0.2	2.8	8.9	25.4	39.7	23.0
<b>Females</b>							
1963-67	240	0.0	3.3	10.0	29.6	37.5	19.6
1968-72	251	0.0	2.0	6.4	29.9	40.2	21.5
1973-77	296	0.0	3.0	9.1	18.9	41.9	27.0
1978-82	289	0.0	2.8	6.6	20.8	42.2	27.7
1983-87	294	0.0	1.0	4.4	21.4	34.0	39.1
1988-90	209	0.0	1.4	7.7	21.1	29.2	40.7
1963-90	1579	0.0	2.3	7.3	23.4	37.9	29.2

In the period 1963-90 a total of 677 male and 1913 female patients with gall bladder and bile ducts cancer were diagnosed in Slovenia. In 484 patients (19%) cancer was diagnosed at death and they are not included in the analysis.

The incidence of gall bladder cancer was stable till 1977. Later the incidence decreased in both sexes (30,31). In 1963-67 the crude rate was 3.4/100,000 males and 7.4/100,000 females; in 1988-90 it was 2.6/100,000 males and 7.6/100,000 females. The percentage of microscopically confirmed cases increased from 55% in 1963-67 to 81% in 1988-90.

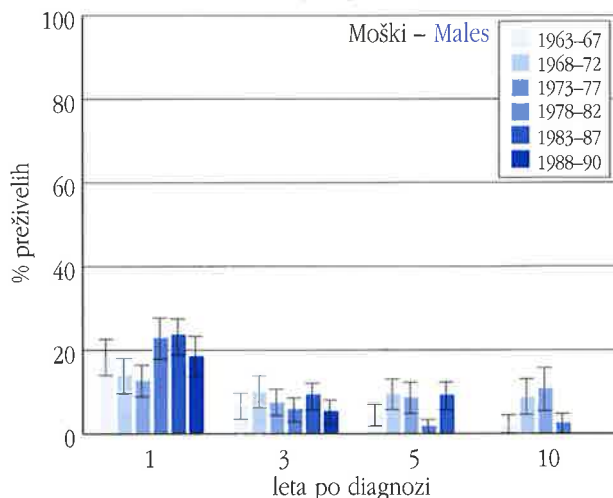
The age distribution changed (Table 1). The percentage of the eldest age group increased in both sexes. The extent of disease at diagnosis changed in both sexes. More patients were diagnosed in localised stage in the last two time-periods of observation. (Table 2).

**TABELA 2:** Žolčnik in žolčni vodi. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

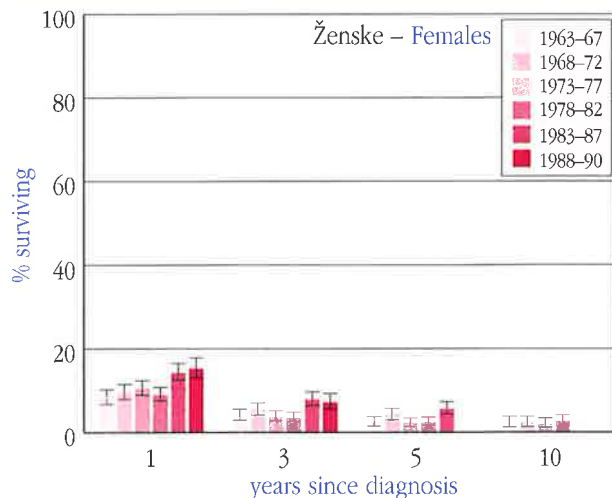
**TABLE 2:** Gall bladder and bile ducts. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
<b>Males</b>					
1963-67	89	-	-	-	-
1968-72	85	14.1	27.1	35.3	23.5
1973-77	92	18.5	31.5	38.0	12.0
1978-82	85	17.6	41.2	30.6	10.6
1983-87	105	26.7	33.3	25.7	14.3
1988-90	71	29.6	21.1	36.6	12.7
1963-90	527	21.2	31.3	32.9	14.6
<b>Females</b>					
1963-67	240	-	-	-	-
1968-72	251	10.8	27.1	51.0	11.2
1973-77	296	11.1	32.8	50.7	5.4
1978-82	289	12.5	33.9	47.8	5.9
1983-87	294	18.7	31.0	38.8	11.6
1988-90	209	19.1	35.9	32.1	12.9
1963-90	1579	14.3	32.0	44.6	9.1

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom žolčnika in žolčnih vodov zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with gall bladder and bile ducts cancer diagnosed in the period 1963 – 90 by sex and period of observation.



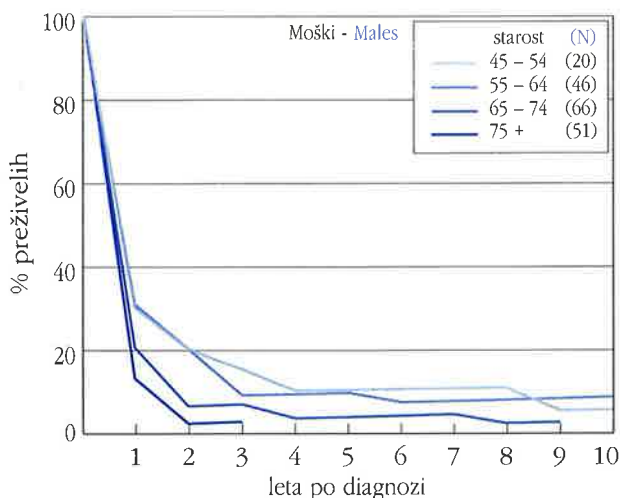
**TABELA 3:** Žolčnik in žolčni vodi. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Gall bladder and bile ducts. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis	
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	17.05	5.68	3.41	1.14	8.09	3.83	2.13	1.70	18.01	6.76	4.61	2.24	8.39	4.30	2.61	2.69
1968-72	13.10	8.33	7.14	4.76	9.20	4.80	3.60	1.60	13.75	9.73	9.33	8.52	9.57	5.44	4.49	2.63
1973-77	11.60	5.80	5.80	4.64	10.05	3.47	2.08	1.39	12.42	7.18	8.39	10.49	10.49	3.97	2.63	2.34
1978-82	21.18	4.71	1.18	1.18	8.74	3.28	2.19	1.82	22.55	5.71	1.63	2.36	9.08	3.70	2.71	2.99
1983-87	22.12	7.69	6.73		13.61	6.80	4.42		23.36	9.13	9.04		14.27	7.91	5.76	
1988-90	17.14	4.29			14.63	6.34			18.24	5.20			15.28	7.29		

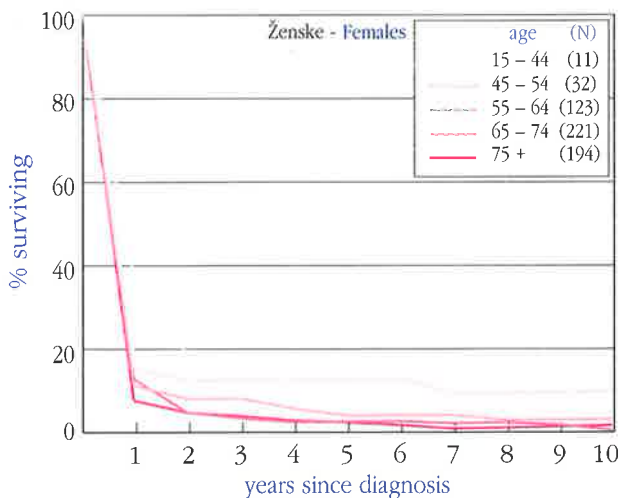
Odstotek relativnega enoletnega preživetja se je statistično značilno povečal z 12% na 22% pri moških in z 8% na 15% pri ženskah. Odstotek tri- in petletnega preživetja je ostajal bolj ali manj stalen (približno 5% pri moških in 3% pri ženskah) (slika 2, tabela 3). Glede na starost ob diagnozi je bil odstotek preživetja večji pri mlajših bolnikih obeh spolov (slika 3).

The relative one-year survival rate increased from 12% to 22% in male and from 8% to 15% in female. The three- and five-year survival rate in both sexes remained almost the same (about 5% in male and 3% in female, respectively) (Figure 2, Table 3). In relation to age at diagnosis younger patients of both sexes survived much better than the elderly (Figure 3).

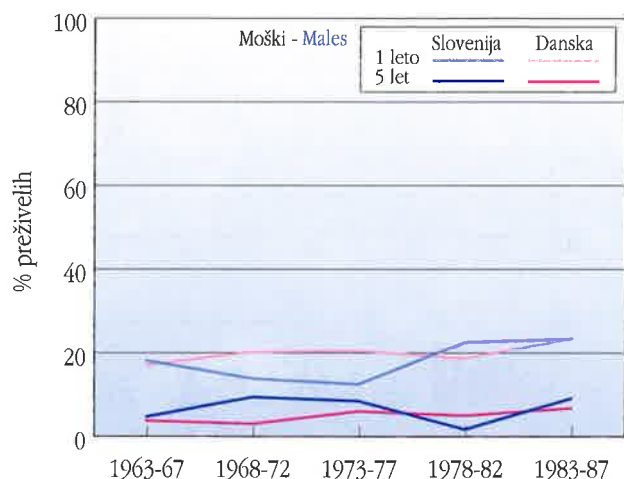
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom žolčnika in žolčnih vodov zbolelih v letih 1978 – 87 po spolu in starosti.



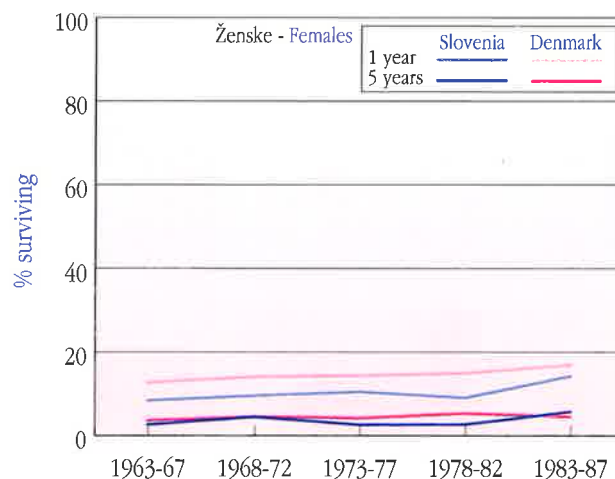
**FIGURE 3:** Relative ten-year survival of gall bladder and bile ducts cancer patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom žolčnika in žolčnih vodov, zbolelih v letih 1963-87 v Sloveniji in na Danskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of gall bladder and bile duct cancer patients, diagnosed in 1963-87 in Slovenia and Denmark, by sex and period of observation.



V zadnjih obdobjih je bilo odkritih več bolnikov z lokaliziranim rakom. To ni vplivalo na relativno petletno preživetje, ker se rak po enem letu običajno ponovi. V opazovanem obdobju je bila edina metoda zdravljenja operacija brez sistematične limfadenektomije in jetrne resekcije. Večji odstotek enoletnega preživetja si lahko razlagamo tudi z uvedbo interventne radiologije in endoskopskimi posegi (biliarni šant in endoproteza), kot tudi z boljšo oskrbo bolnikov med zdravljenjem.

Recently, there have been more patients with localized disease; this, however, does not influence the relative 5-year survival rates, as the disease normally recurs after a one-year disease-free interval. In the observed period, surgery without systematic lymphadenectomy and liver resection remained the only treatment method available. The higher one-year survival rate could be associated with the development of interventional radiology and endoscopic procedures (biliary shunt and endoprosthesis), as well as with better medical care during therapy.

# TREBUŠNA SLINAVKA

## PANCREAS

MKB 8 / ICD 8: 157

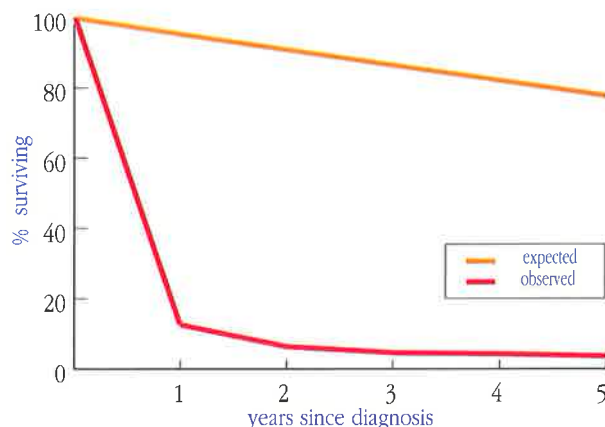
V obdobju 1963-90 je zbolelo v Sloveniji za rakom trebušne slinavke 1630 moških in 1549 žensk. Pri 548 bolnikih (17%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka trebušne slinavke naraščala pri obeh spolih (30,31). V letih 1963-67 je bila groba incidenčna mera 4,5/100.000 moških in 3,8/100.000 žensk, v letih 1988-90 pa 8,7/100.000 moških in 8,7/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal z 31% v letih 1963-67 na 61% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1). Odstotek bolnikov se je v zadnjih obdobjih povečal v najstarejši starostni skupini pri obeh spolih. Odstotek zgodnjega lokaliziranega stadija se je povečal (tabela 2).

**TABELA 1: Trebušna slinavka. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.**

**TABLE 1: Pancreas. Patients included in the analysis by sex, age and period of observation.**

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b>							
1963-67	159	0.0	8.2	11.9	26.4	40.3	13.2
1968-72	183	0.0	8.7	11.5	29.0	41.0	9.8
1973-77	192	0.0	8.3	15.1	26.6	37.5	12.5
1978-82	296	0.0	6.4	17.2	26.0	32.4	17.9
1983-87	311	0.0	3.9	14.8	33.1	24.1	24.1
1988-90	219	0.0	3.2	10.0	30.1	31.5	25.1
1963-90	1360	0.0	6.1	13.8	28.8	33.2	18.1
<b>Females</b>							
1963-67	136	0.0	8.1	7.4	31.6	36.0	16.9
1968-72	154	0.0	5.2	10.4	24.0	38.3	22.1
1973-77	205	0.0	3.4	9.3	25.9	41.0	20.5
1978-82	242	0.0	1.2	10.3	20.7	37.6	30.2
1983-87	305	0.0	3.6	6.2	21.6	32.8	35.7
1988-90	229	0.0	1.3	3.9	26.2	27.9	40.6
1963-90	1271	0.0	3.4	7.7	24.3	35.2	29.4



**SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z rakom trebušne slinavke, zbolelih v letih 1983 – 87 v Sloveniji.**

**FIGURE 1: Observed and expected five - year survival of pancreatic cancer patients diagnosed in the period 1983 – 87 in Slovenia.**

In the period 1963-90, a total of 1630 male and 1549 female patients with pancreatic cancer were diagnosed in Slovenia. In 548 patients (17%) cancer was diagnosed at death and they are not included in the analysis.

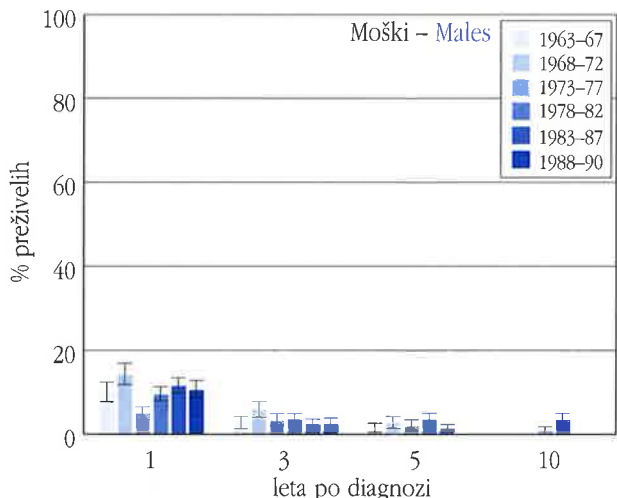
The incidence of pancreatic cancer increased during the whole time-period of observation in both sexes (30,31). In 1963-67 the crude rate was 4.5/100,000 males and 3.8/100,000 females; in 1988-90 it was 8.7/100,000 males and 8.7/100,000 females. The percentage of microscopically confirmed cases increased from 31% in 1963-67 to 61% in 1988-90. The age distribution changed (Table 1). The percentage of the eldest age group increased in both sexes. More patients were diagnosed in localized stage in each subsequent time period of observation (Table 2). This may be attributed to improved diagnostic procedures by means involving broad use of ultrasound and computerized tomography, as well as ultrasound guided fine-needle biopsies.

**TABELA 2: Trebušna slinavka. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.**

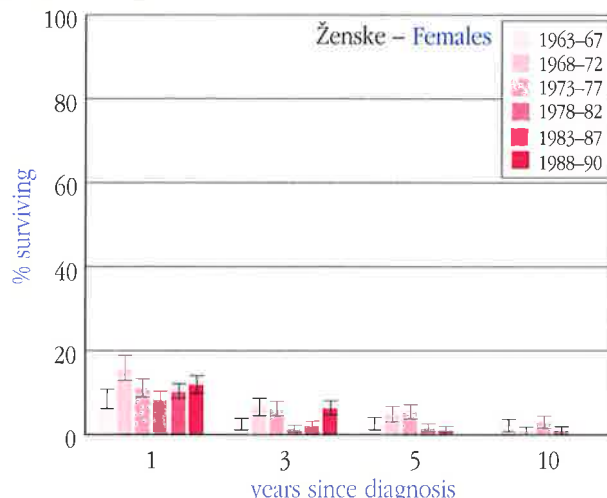
**TABLE 2: Pancreas. Patients included in the analysis by sex, extent of disease and period of observation.**

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
<b>Males</b>					
1963-67	159	-	-	-	-
1968-72	183	8.7	26.2	47.0	18.0
1973-77	192	13.5	28.6	50.0	7.8
1978-82	296	16.9	26.7	45.6	10.8
1983-87	311	16.4	24.4	45.7	13.5
1988-90	219	18.7	24.7	46.1	10.5
1963-90	1360	15.3	26.0	46.6	12.1
<b>Females</b>					
1963-67	136	-	-	-	-
1968-72	154	9.7	26.6	46.1	17.5
1973-77	205	13.2	28.8	51.2	6.8
1978-82	242	17.4	23.6	50.0	9.1
1983-87	305	17.0	23.9	45.9	13.1
1988-90	229	16.6	24.5	45.0	14.0
1963-90	1271	15.3	25.2	47.6	11.9

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom trebušne slinavke zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of pancreatic cancer patients diagnosed in the period 1963 – 90 by sex and period of observation.



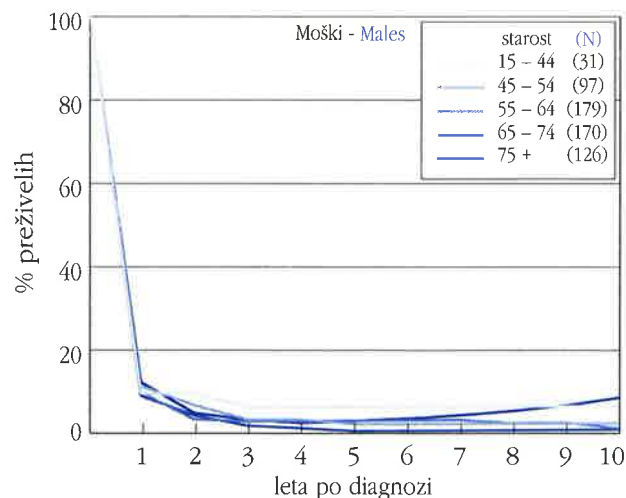
**TABELA 3:** Trebušna slinavka. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Pancreas. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	1		3		5		10		1		3		5		10	
1963-67	9.68	2.58	1.29	0.00	8.27	2.26	2.26	1.50	10.15	3.00	1.68	0.00	8.55	2.51	2.73	2.32
1968-72	13.57	5.09	2.26	0.00	15.13	5.92	3.95	0.66	14.19	5.86	2.89	0.00	15.73	6.69	4.87	1.05
1973-77	4.76	2.98	1.79	0.60	10.72	5.62	4.60	2.04	4.98	3.41	2.26	0.99	11.09	6.25	5.55	3.15
1978-82	9.06	3.26	2.90	2.17	8.11	1.41	1.41	0.70	9.48	3.75	3.69	3.67	8.45	1.61	1.77	1.18
1983-87	11.00	2.27	1.29		9.78	2.02	1.01		11.56	2.64	1.68		10.25	2.34	1.31	
1988-90	10.05	2.28			11.36	5.45			10.57	2.68			11.93	6.36		

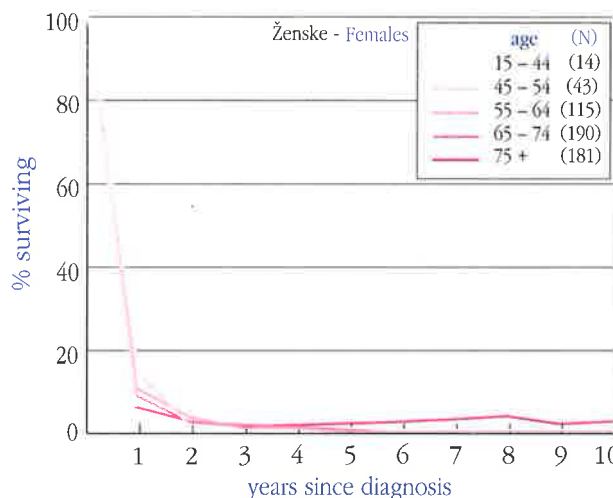
S pomočjo novih diagnostičnih metod, kot so ultrazvok, računalniška tomografija in ultrazvočno vodena citološka punkcija je bilo v zadnjih obdobjih odkritih več lokaliziranih rakov, kar pa ni vplivalo na relativno petletno preživetje bolnikov, ki je bilo manjše od 5% (slika 2, tabela 3).

The relative one-, three-, and five-year survival rates in both sexes remained almost the same, and the changes were not significant (Figure 2, Table 3).

**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom trebušne slinavke zbolelih v letih 1978 – 87 po spolu in starosti.

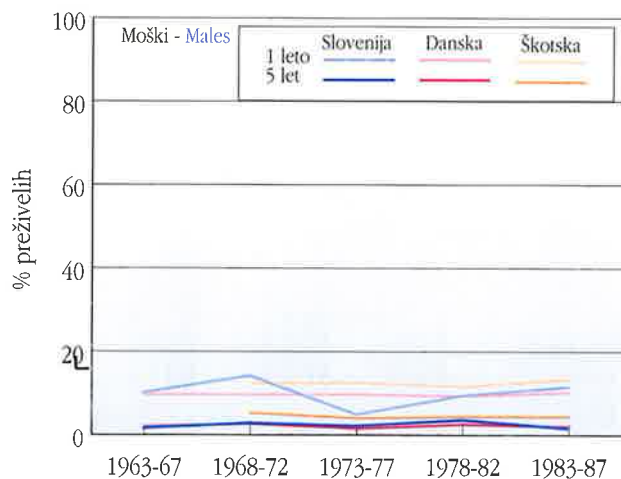


**FIGURE 3:** Relative ten-year survival of pancreatic cancer patients diagnosed in the period 1978 – 87 by sex and age.

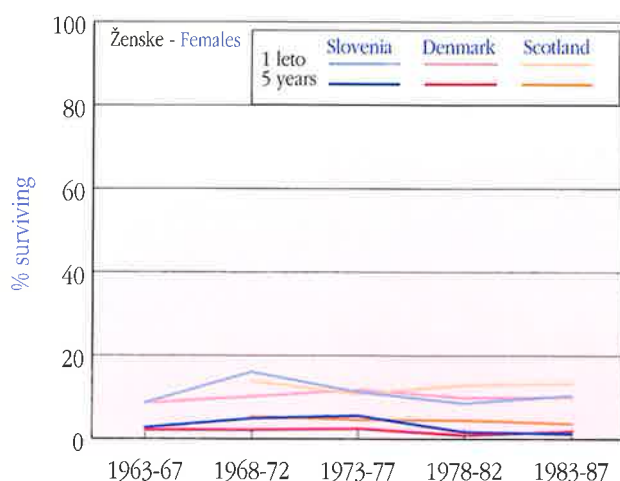




**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom trebušne slinavke, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five year relative survival rates of pancreatic cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



Še vedno je edino možno zdravljenje operacija (resekcija), ki je izvedljiva le pri 15% bolnikov. Omenjen odstotek bolnikov, ki jih lahko operiramo, se v zadnjih desetletjih ni spremenil. V zadnjem desetletju se je bistveno zmanjšalo število operativnih komplikacij in zgodnja pooperativna umrljivost.

Surgery (resection), which is feasible only in 15% of patients, is still the only treatment possible. The mentioned percentage of patients suitable for surgery has not changed during the last decades. However, the rate of surgery-related complications and early postoperative mortality have markedly decreased in the past decade.

## SEČNI MEHUR

## BLADDER

MKB 8 / ICD 8: 188

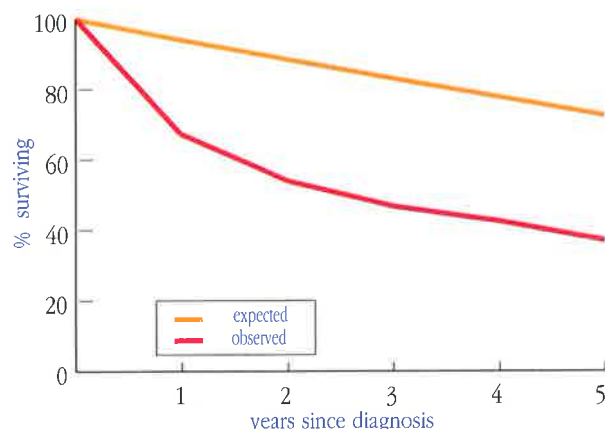
V obdobju 1963-90 je zbolelo v Sloveniji za rakom mehurja 2313 moških in 691 žensk. Pri 195 bolnikih (6%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka mehurja naraščala pri obeh spolih; porast je bil največji v 60. in 70. letih (30,31,65). V letih 1963-67 je bila groba incidenčna mera 5,7/100.000 moških in 1,4/100.000 žensk, v letih 1988-90 pa 11,1/100.000 moških in 4/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal z 68% v letih 1963-67 na 92% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1). Odstotek bolnikov v najstarejši starostni skupini se je povečal. Razširjenost bolezni ob diagnozi je bila različna, vendar ti podatki niso zanesljivi, ker jih bolnišnice Registru pogosto ne sporočijo (tabela 2). Tako tudi težko ocenjujemo odstotek prognostično ugodnejših površinsko rastočih karcinomov v našem gradivu.

**TABELA 1:** Sečni mehur. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

**TABLE 1:** Bladder. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
Males 1963-67	186	0.5	1.1	5.9	36.0	37.6	18.8
1968-72	300	0.0	5.3	4.0	25.3	47.3	18.0
1973-77	331	0.0	2.7	9.1	18.1	46.2	23.9
1978-82	481	0.4	3.5	10.0	20.6	40.1	25.4
1983-87	566	0.0	2.8	9.2	24.0	31.3	32.7
1988-90	307	0.0	1.6	12.4	25.1	30.3	30.6
1963-90	2171	0.1	3.0	8.8	23.7	38.1	26.2
Females 1963-67	47	0.0	4.3	6.4	34.0	31.9	23.4
1968-72	92	0.0	2.2	7.6	22.8	35.9	31.5
1973-77	90	0.0	3.3	2.2	17.8	42.2	34.4
1978-82	130	0.0	3.1	6.2	18.5	35.4	36.9
1983-87	167	0.0	2.4	4.8	19.8	29.9	43.1
1988-90	112	0.0	3.6	5.4	23.2	24.1	43.8
1963-90	638	0.0	3.0	5.3	21.3	32.8	37.6



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z rakom sečnega mehurja, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of bladder cancer patients diagnosed in the period 1983 – 87 in Slovenia.

In the period 1963-90 a total of 2313 male and 691 female patients with bladder cancer were diagnosed in Slovenia. In 195 patients (6%) cancer was diagnosed at death and they are not included in the analysis.

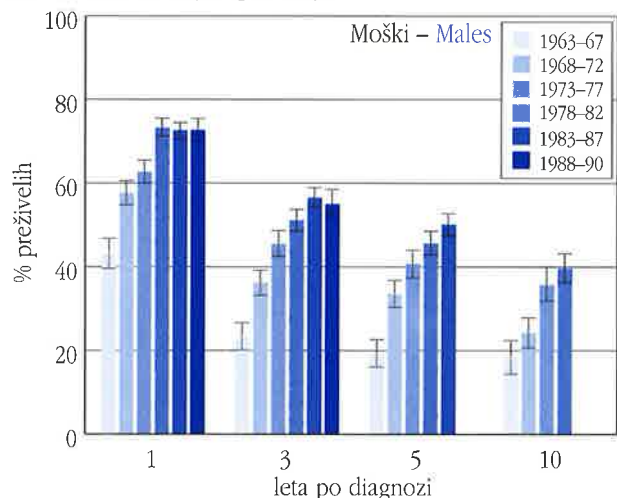
In this time-period the incidence increased in both sexes, the increase being steepest in the 60's and 70's (30,31,65). In 1963-67 the crude incidence rate was 5.7/100,000 males and 1.4/100,000 females; in 1988-90 it was 11.1/100,000 males and 4/100,000 females. The percentage of microscopically confirmed cases increased from 68% in 1963-67 to 92% in 1988-90. The age distribution changed (Table 1). The percentage of the eldest age group showed the greatest increase. The extent of disease at diagnosis changed, but the data are not very reliable, as this item is often not filled in by the notifying clinician (Table 2). It is also difficult to assess the percentage of prognostically more favourable superficial carcinomas in our material.

**TABELA 2:** Sečni mehur. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

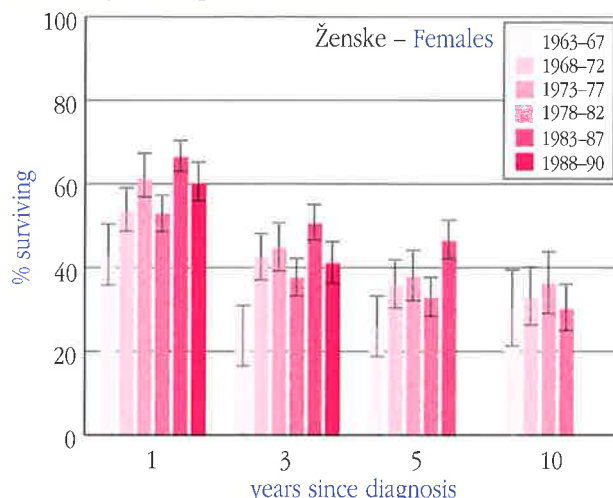
**TABLE 2:** Bladder. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
Males 1963-67	186	-	-	-	-
1968-72	300	50.0	32.0	8.7	9.0
1973-77	331	64.0	19.2	9.6	7.2
1978-82	481	64.2	22.2	6.7	6.9
1983-87	566	61.1	20.3	5.7	12.9
1988-90	307	47.2	24.8	7.8	20.2
1963-90	2171	58.5	23.0	7.3	11.0
Females 1963-67	47	-	-	-	-
1968-72	92	47.8	29.3	12.0	10.9
1973-77	90	58.9	17.8	14.4	8.9
1978-82	130	53.8	30.0	8.5	7.7
1983-87	167	52.7	26.9	2.4	18.0
1988-90	112	35.7	22.3	13.4	28.6
1963-90	638	49.9	25.7	9.1	15.2

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom sečnega mehurja zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with bladder cancer diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Sečni mehur. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Bladder. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	40.54	19.46	14.05	9.19	40.91	27.27	20.46	18.18	42.82	23.14	19.08	18.35	42.66	31.13	25.77	30.18
1968-72	53.92	29.81	24.12	11.98	50.82	36.46	27.62	18.53	57.20	35.89	33.23	24.10	53.26	42.33	35.80	32.97
1973-77	58.43	37.16	28.92	17.13	57.96	38.25	28.98	19.71	62.18	45.10	40.40	35.46	60.84	44.55	37.82	36.09
1978-82	68.49	42.28	33.10	19.86	50.39	32.56	25.58	17.05	72.63	50.68	45.26	39.35	52.69	37.51	32.85	30.12
1983-87	67.64	46.11	35.59		62.87	42.99	35.09		72.01	56.04	49.71		66.10	50.37	46.28	
1988-90	68.20	45.90			57.14	35.49			72.06	54.54			59.86	40.92		

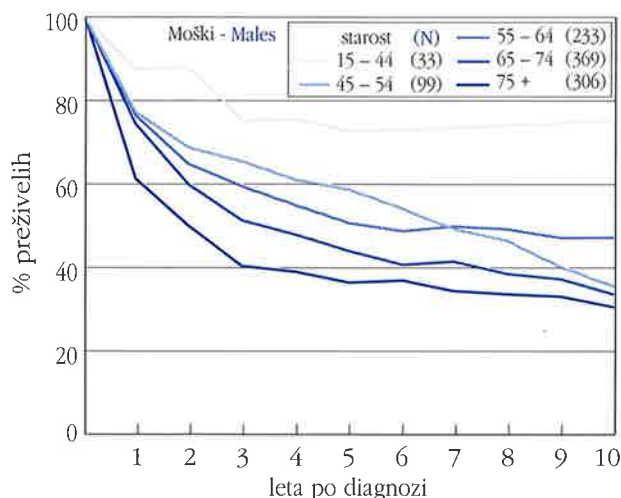
Odstotek relativnega eno- tri- in petletnega preživetja se je povečal (slika 2, tabela 3). Odstotek preživetja je bil pri mlajših bolnikih obeh spolov večji, razlike so posebej opazne pri tri- in petletnem preživetju (slika 3).

V začetku obravnavanega obdobja sta v Sloveniji delovala le dva urološka centra: Urološka klinika v Ljubljani in urološki oddelek Splošne bolnišnice v Mariboru. Kasneje so bili ustanovljeni urološki oddelki še v Celju, Slovenj Gradcu,

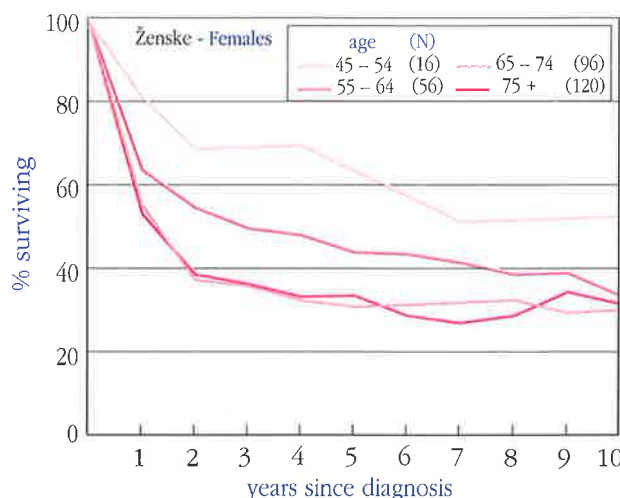
The relative one-, three- five-year survival rate improved with time (Figure 2, Table 3). In relation to age at diagnosis, younger patients of both sexes survived better. The difference was more evident in three- and five-year survival (Figure 3).

At the beginning of the observation period, there were only two urological centers in Slovenia: the Department of Urology of the University Medical Center in Ljubljana, and the Urological

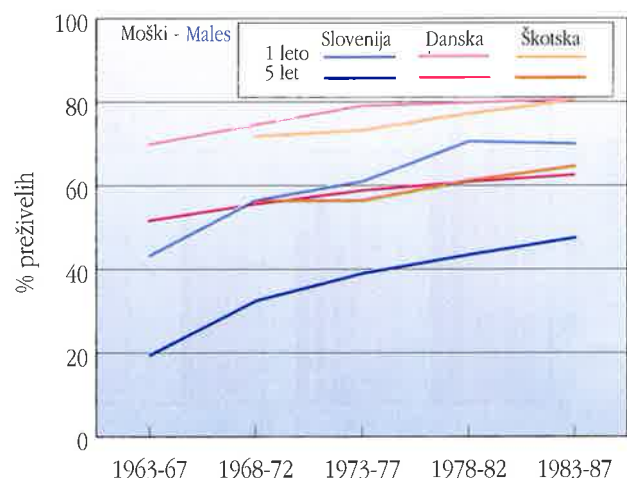
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom sečnega mehurja zbolelih v letih 1978 – 87 po spolu in starosti.



**FIGURE 3:** Relative ten-year survival of bladder cancer patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom sečnega mehurja, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.

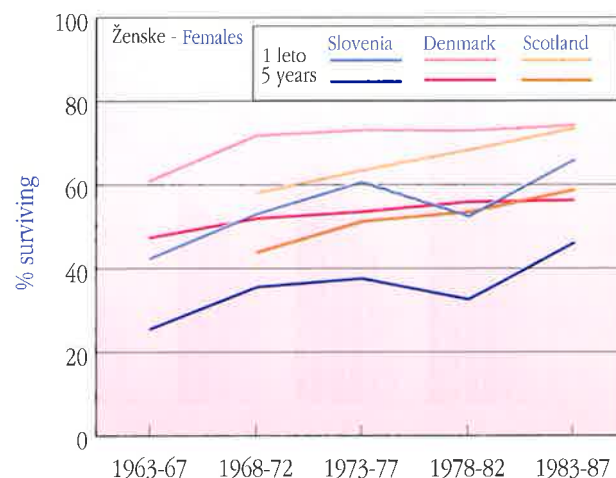


Murski Soboti, Šempetru pri Novi Gorici, Izoli in v Novem mestu. Na obevanje so prihajali bolniki ves čas na Onkološki inštitut v Ljubljani.

Za potrditev diagnoze so v vseh centrih uporabljali rentgenske preiskave, cistoskopijo, biopsijo in histološko preiskavo; citološka preiskava urina se ni splošno uveljavila. Potrditvi diagnoze je sledilo določanje razširjenosti bolezni, ki je bilo povezano z diagnostičnimi možnostmi in načinom zdravljenja. Do leta 1968 so na videz začetne rake mehurja elektrokoagulirali pri cistoskopiji, če so bili multipli ob odprti cistotomiji. Operabilnost napredovalih rakov mehurja (pred cistektomijo) so presojali s palpacijo mehurja v narkozi. To metodo je po letu 1980 nadomestila računalniška tomografija. Leta 1968 je bila uvedena transuretralna resekcija (TUR) kot metoda zdravljenja. Ta novost je lahko vplivala na porast registrirane incidence in delež mikroskopsko potrjenih karcinomov mehurja, kot tudi na učinek zdravljenja zaradi pogostih in ponavljajočih TUR tumorjev mehurja v novo odprtih uroloških centrih.

Sodelavci Onkološkega inštituta in Urološke klinike (člani urološko-onkološkega konzilija) smo leta 1983 pripravili smernice za zdravljenje bolnikov z rakom mehurja in leta 1987 na 6. podiplomskem izobraževalnem dnevu iz klinične onkologije v Ljubljani ponovno celostno predstavili problem diagnostike, zdravljenja in predlog skupne doktrine za obravnavo bolnikov z rakom mehurja (66). Kljub temu se stanje do danes ni bistveno spremenilo. Jeseni 1988 je pričel delovati nov konzilij specialistov, ki je po potrditvi diagnoze vpeljal bolj sistematično določanje obsega bolezni in nekoliko spremenjen predlog za zdravljenje teh bolnikov. Izsledki tovrstne obravnave bolnikov bodo znani v prihodnjih letih.

**Figure 4:** One- and five-year relative survival rates of bladder cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



Department at the General Hospital in Maribor. Later on, such urological departments were also established in Celje, Slovenj Gradec, Murska Sobota, Šempeter at Nova Gorica, Izola and Novo mesto. Radiation therapy has always been performed exclusively at the Institute of Oncology in Ljubljana.

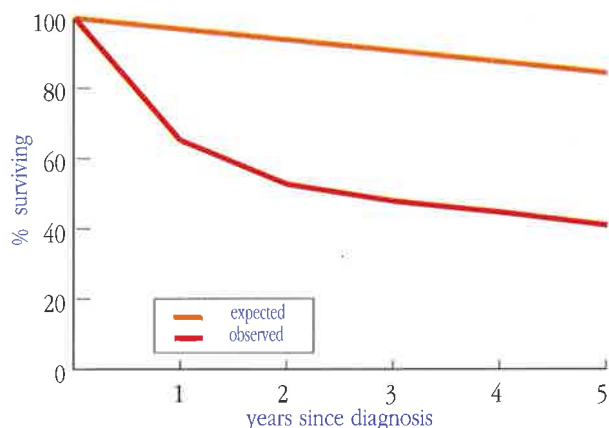
In all the centers the diagnosis was confirmed by means of radiological examinations, cystoscopy, biopsy and histological examination, while urine cytology did not become a part of common practice. The confirmation of diagnosis was followed by the staging of disease, which depended on the diagnostic facilities and the method of treatment available. Till 1968, presumed early stages of bladder cancer had been treated by electrocoagulation on cystoscopy, and multiple tumors were treated by open cystotomy. The operability of advanced bladder cancers (prior to cystectomy) was evaluated by palpation of the urinary bladder under general anesthesia. After 1980, this method was replaced by computer tomography. Transurethral resection (TUR) as a method of cancer treatment was introduced in 1968. This new approach, resulting in frequent and repeated use of TUR for the treatment of bladder tumors in newly established urological centers, may have influenced an increase in the incidence and rate of microscopically verified bladder cancers, as well as an improvement in treatment effects.

In 1983, specialists of the Institute of Oncology and the University Department of Urology (members of urological-oncological advisory team) prepared guidelines for the treatment of patients with bladder cancer; in 1987, the problem of bladder cancer was presented comprehensively at the 6th Postgraduate Education Day in Clinical Oncology held in Ljubljana, including different aspects such as diagnosis, treatment and proposals for a uniform doctrinary approach to bladder cancer (66). Nevertheless, the situation has so far not considerably changed. In the autumn 1988, a new advisory team of specialists was formed, which introduced a more systematic staging of the disease after diagnosis, and proposed a slightly changed approach to the treatment of bladder cancer patients. The results of the new treatment approach will be available in the following years.

## LEDVICA

## KIDNEY

MKB 8 / ICD 8: 1890



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z rakom ledvice, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of renal cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom ledvic 1075 moških in 737 žensk. Pri 178 bolnikih (10%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka ledvic naraščala pri obeh spolih, porast je bil najbolj strm v 70. in 80. letih (30,31,67). V letih 1963-67 je bila groba incidenčna mera 2,3/100.000 moških in 1,7/100.000 žensk; v letih 1988-90 pa 7/100.000 moških in 4,5/100.000 žensk. Delež mikroskopsko potrjenih primerov se je povečal od 83% v letih 1963-67 na 90% v letih 1988-90.

Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1). Delež bolnikov v najstarejši starostni skupini se je v mlajših obdobjih večal. Povprečni delež otrok do 14. leta starosti je bil manjši pri moških (3,5%) kot pri ženskah (5%). V povprečju je bilo največ bolnikov starih 55-74 let. Tudi porazdelitev bolnikov glede na razširjenost bolezni ob diagnozi se je spreminjala (tabela 2). Delež lokalizirane bolezni je bil večji pri ženskah kot pri moških, posebno veli-

**TABELA 1:** Ledvica. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

**TABLE 1:** Kidney. Patients included in the analysis by sex, age and period of observation.

	Period of observation	No.	Age at diagnosis (%)					
			-14	15-44	45-54	55-64	65-74	75+
Males	1963-67	86	2.3	15.1	14.0	36.0	19.8	12.8
	1968-72	127	5.5	8.7	16.5	25.2	32.3	11.8
	1973-77	135	4.4	11.1	25.2	20.0	33.3	5.9
	1978-82	178	5.1	10.7	20.2	29.8	25.3	9.0
	1983-87	255	2.4	8.6	17.6	33.7	26.3	11.4
	1988-90	188	2.1	7.4	21.8	28.7	24.5	15.4
	1963-90	969	3.5	9.7	19.5	29.2	26.9	11.1
Females	1963-67	70	12.9	10.0	11.4	47.1	14.3	4.3
	1968-72	83	8.4	9.6	15.7	24.1	34.9	7.2
	1973-77	95	6.3	14.7	15.8	23.2	32.6	7.4
	1978-82	134	2.2	9.7	14.9	26.1	28.4	18.7
	1983-87	152	5.3	7.9	17.1	27.6	27.0	15.1
	1988-90	131	0.0	8.4	10.7	35.9	26.7	18.3
	1963-90	665	5.0	9.8	14.4	29.9	27.7	13.2

In the period 1963-90 a total of 1075 male and 737 female patients with renal cancer were diagnosed in Slovenia. In 178 patients (10%) cancer was diagnosed at death and they are not included in the analysis.

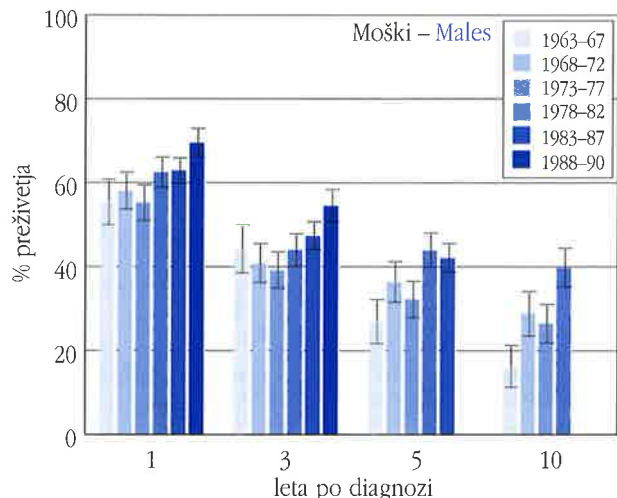
In this time-period, the incidence was increasing in both sexes; the increase was steepest in the 70's and 80's (30,31,67). In the period 1963-67 the crude incidence rate was 2.3/100,000 males and 1.7/100,000 females; in 1988-90 it was 7/100,000 males and 4.5/100,000 females. The percentage of microscopically confirmed cases increased from 83% in 1963-67 to 90% in 1988-90. The age distribution changed (Table 1). The percentage of elderly patients was greater in the last two periods of observation. The average percentage of children was smaller in men (3.5%) than in women (5%); the majority of patients was in the age-group 55-74 years. The extent of disease at diagnosis changed (Table 2).

**TABELA 2:** Ledvica. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

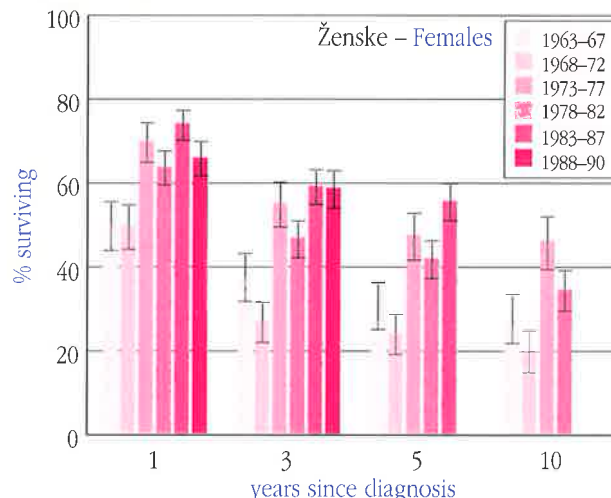
**TABLE 2:** Kidney. Patients included in the analysis by sex, extent of disease and period of observation.

	Period of observation	No.	Extent of disease (%)			
			Localized	Regional	Distant	Unknown
Males	1963-67	86	-	-	-	-
	1968-72	127	40.9	22.0	32.3	4.7
	1973-77	135	45.2	16.3	34.1	4.4
	1978-82	178	51.1	13.5	30.3	5.1
	1983-87	255	45.5	15.7	31.0	7.8
	1988-90	188	52.1	17.0	22.3	8.5
	1963-90	969	47.3	16.5	29.7	6.5
Females	1963-67	70	-	-	-	-
	1968-72	83	45.8	21.7	24.1	8.4
	1973-77	95	55.8	11.6	29.5	3.2
	1978-82	134	52.2	15.7	26.1	6.0
	1983-87	152	59.9	13.2	15.8	11.2
	1988-90	131	51.9	15.3	20.6	12.2
	1963-90	665	53.8	15.1	22.5	8.6

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom ledvic zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with renal cancer diagnosed in the period 1963 – 90 by sex and period of observation.



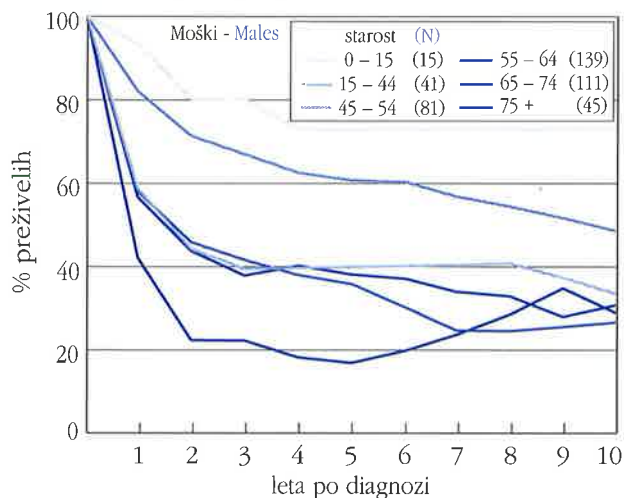
**TABELA 3:** Ledvica. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Kidney. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	53.09	39.51	22.22	10.60	48.53	35.29	27.94	22.06	54.81	43.75	26.66	16.09	49.26	37.02	30.45	27.11
1968-72	55.20	35.65	28.98	17.90	48.19	24.85	21.13	14.91	57.43	40.40	35.99	28.62	49.16	26.49	23.68	19.58
1973-77	52.99	35.08	26.87	17.91	67.39	50.55	41.36	34.47	54.70	38.72	31.90	26.21	68.96	54.35	46.87	45.48
1978-82	60.00	39.58	36.71	26.96	61.19	42.54	35.82	24.63	61.86	43.57	43.44	39.33	62.82	46.17	41.31	34.02
1983-87	60.16	41.95	34.43		71.43	54.07	48.01		62.31	46.82	41.63		73.17	58.36	54.88	
1988-90	66.49	48.40			63.36	53.44			68.83	53.95			65.00	57.93		

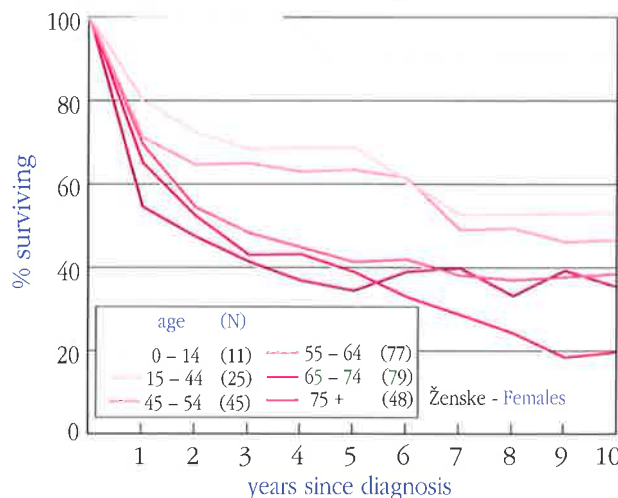
ka razlika je bila po letu 1983. Morda je vzrok za razliko v tem, da so ženske zaradi pogostejših ginekoloških pregledov in večje zbolelosti za žolčnimi kamni v večji meri deležne natančnejših, predvsem ultrazvočnih pregledov. Več zgodaj odkrite bolezni pa pomeni tudi daljše preživetje (slika 2, tabela 3). Pri ženskah je bilo v letih 1983-87 petletno preživetje statistično značilno večje kot pri moških.

The rate of localized disease was greater in females than in males, the difference being particularly apparent after the year 1983. Perhaps this could be ascribed to the fact that women are given more careful medical attention through regular gynecological examinations and greater morbidity with gallstones. Thus, the greater number of early diagnoses is associated with a longer survival (Figure 2, Table 3). In the

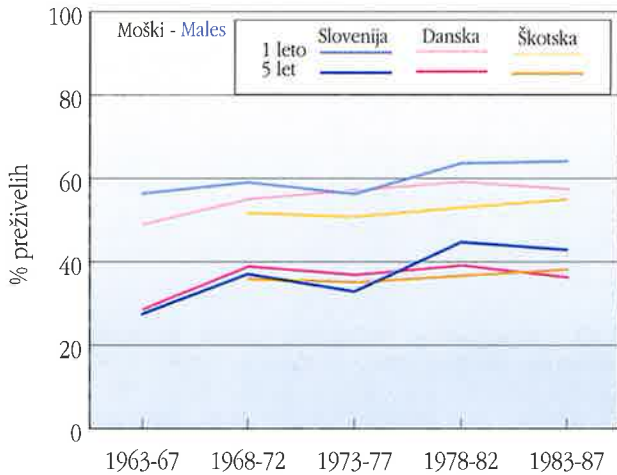
**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom ledvic zbolelih v letih 1978 – 87 po spolu in starosti.



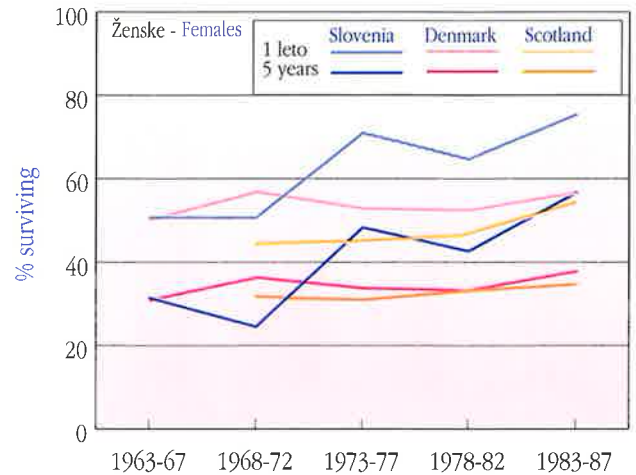
**FIGURE 3:** Relative ten-year survival of renal cancer patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom ledvic, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of renal cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



Glede na starost je bil pri moških odstotek petletnega preživetja večji pri otrocih in v starosti 45-54 let, pri ženskah pa v starosti do 54 let.

Zdravljenje je bilo neglede na spol vedno enako (67). Do leta 1973 so rutinsko zdravili z nefrektomijo, ki so ji včasih dodali še hormone. Po letu 1973 smo uvedli citostatike, v zadnjih letih tudi imunsko zdravljenje (imunomodulatorji). Noben od navedenih načinov zdravljenja ni pokazal večjega učinka na bolezen in na trajanje preživetja. Daljša preživetja v zadnjih letih so posledica boljše in zgodnejše diagnostike in s tem večjega deleža lokalizirane bolezni, napredka v operativnem in podpornem zdravljenju. Edino do sedaj učinkovito zdravljenje je operativno, z do zdaj znanim in uvedenim sistemskim zdravljenjem pa nismo uspeli povečati odstotka petletnega preživetja bolnikov.

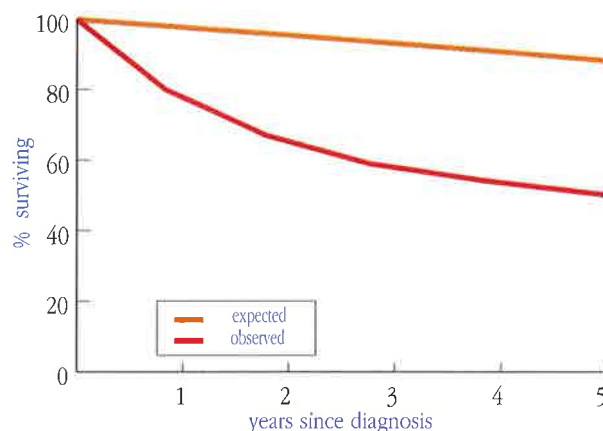
period 1983-1987, the 5-year survival of females was statistically significantly better than that of males. With respect to age, a higher percentage of 5-year survival in males was noted in children and in 45-54-year age group, and in females in the age till 45 years (Figure 3).

Treatment was always the same, regardless of the sex (67). Until 1973, the standard therapy consisted of nephrectomy with or without adjuvant hormonal treatment. After 1973, treatment with cytotoxic drugs - and in recent years also with immunomodulators - was introduced. None of these therapeutic modalities showed any significant effect on the course of disease or on the duration of survival. Higher survival rates observed in recent years result from earlier diagnosis, and hence a greater proportion of localized disease, as well as from advances in surgery and adequate adjuvant therapy. So far, surgery is the only effective treatment modality, whereas the available systemic therapy has failed to increase the survival rates.

# MATERNIČNI VRAT

## CERVIX UTERI

MKB 8 / ICD 8: 180



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnic z rakom materničnega vratu, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five-year survival of cervix uteri cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom materničnega vratu 5236 žensk. Pri 42 bolnicah (1%) je bil rak ugotovljen ob smrti in zato niso bile vključene v analizo.

V opazovanem 28-letnem obdobju je incidenca raka materničnega vratu upadala do leta 1979, v 80. letih se je ustalila (30,31,55,68,69). V letih 1963-67 je bila groba incidenčna mera 27,2/100.000 žensk, v letih 1988-90 pa 15,7/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 93% v letih 1963-67 na 98% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnic se je precej spremenila (tabela 1). Odstotek bolnic, starih 45-54 let se je zmanjšal, odstotek starejših se je povečal. V zadnjem obdobju pa se je povečal tudi odstotek starih 35-44 let. Razširjenost bolezni ob diagnozi se ni dosti spreminjala, v letih 1983-87 smo registrirali manjši odstotek lokalizirane bolezni (FIGO I) in večji odstotek oddaljene razširitve (FIGO III in IV) kot v prejšnjih obdobjih (tabela 2).

Odstotek petletnega relativnega preživetja se ni veliko spremenil, le v obdobju 1978-82 se je prehodno statistično značilno povečal (slika 2, tabela 3). Odstotek desetletnega relativnega preživetja je bil največji (76%) v starostni skupini 15-44 let (slika 3).

**TABELA 1:** Maternični vrat. Bolnice vključene v analizo po starosti in obdobju opazovanja.

**TABLE 1:** Cervix uteri. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
Ženske 1963-67	1156	0.0	32.9	25.1	25.3	13.3	3.5
1968-72	970	0.0	27.7	24.1	26.8	17.0	4.3
1973-77	953	0.0	31.0	24.3	18.5	19.7	6.5
1978-82	807	0.0	29.9	21.7	20.1	18.3	10.0
1983-87	824	0.0	32.2	16.9	24.5	16.3	10.2
1988-90	484	0.0	40.3	13.8	23.1	13.6	9.1
1963-90	5194	0.0	31.7	21.9	23.2	16.5	6.8

In the period 1963-90 a total of 5236 patients with invasive cervical cancer were diagnosed in Slovenia. In 42 patients (1%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence decreased till 1979, and was rather stable in the 80's (30,31,55,68,69). In the period 1963-67 it was 27.2/100,000, and in the period 1988-90 it was 15.7/100,000. The percentage of microscopically confirmed cases increased from 93% in 1963-67 to 98% in 1988-90. The age distribution changed noticeably (Table 1). The percentage of women aged 45-54 decreased, and the percentage of elderly women increased. In the last time-period, the percentage of women aged 35-44 years also increased. The extent of disease at diagnosis was relatively stable over the whole 28-year period of observation; in the period 1983-87 a lower percent of FIGO I stage was noticed (Table 2).

The relative five-year survival rate of cervical cancer patients was fairly stable, only in the period 1978-82 an increase was indicated (Figure 2, Table 3). In relation to age at diagnosis younger women survived better than the elderly. The ten year relative survival rate was highest (76%) in the age group 15-44 years (Figure 3).

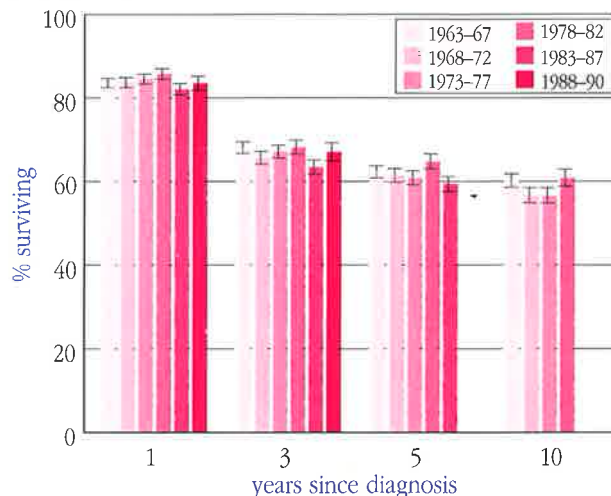
**TABELA 2:** Maternični vrat. Bolnice vključene v analizo po razširjenosti bolezni in obdobju opazovanja.

**TABLE 2:** Cervix uteri. Patients included in the analysis by extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
Females 1963-67	1156	-	-	-	-
1968-72	970	41.4	33.2	24.4	0.9
1973-77	953	43.0	27.0	29.4	0.6
1978-82	807	45.2	29.1	24.0	1.2
1983-87	824	39.4	28.8	30.9	0.6
1988-90	484	43.0	27.7	28.5	0.8
1963-90	5194	42.3	29.3	27.3	0.8



**FIGURE 2: Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with cervix uteri cancer diagnosed in the period 1963 – 90 by period of observation.**



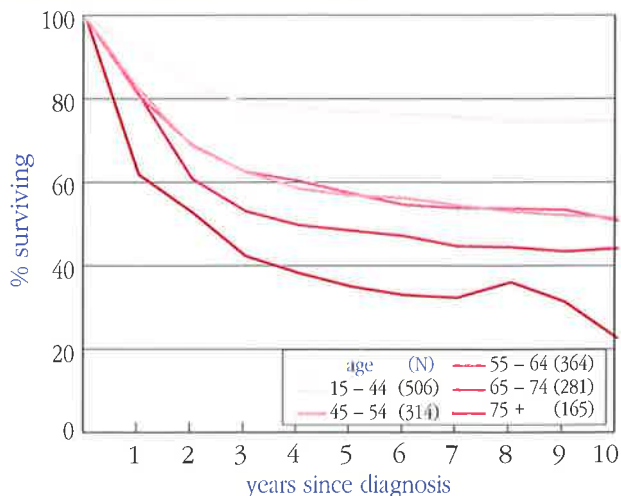
**TABELA 3: Maternični vrat. Opazovano in relativno preživetje po obdobju opazovanja.**  
**TABLE 3: Cervix uteri. Observed and relative survival by period of observation.**

Period of observation	Observed (%)				Relative (%)			
	Females				Females			
	Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10
1963-67	82.09	64.94	57.69	50.95	83.04	67.40	61.66	59.58
1968-72	81.78	62.27	56.35	46.98	82.89	65.02	60.83	56.04
1973-77	82.48	63.40	55.52	46.55	83.73	66.47	60.29	56.01
1978-82	83.49	64.03	58.53	49.23	84.91	67.50	64.15	60.27
1983-87	79.94	59.62	53.77		81.30	62.83	58.87	
1988-90	81.57	63.66			82.71	66.45		

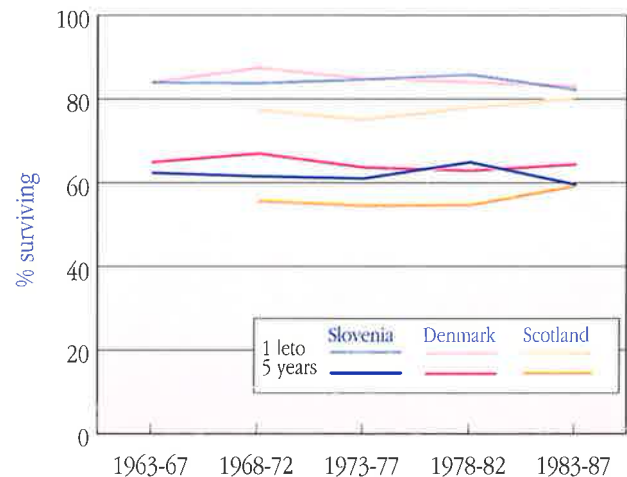
Upadanje števila bolnic z invazijskim rakom v starosti 45-54 let je posledica presejanja žensk z jemanjem brisov PAP, ki teče v Sloveniji od leta 1960 dalje. Tega presejanja pa so bile deležne le ženske v fertilnem obdobju, ki so prihajale na ginekološki pregled zaradi drugih težav. Pri njih je bilo odkritih tudi največ primerov invazijskega raka v lokaliziranem (FIGO I) stadiju. Ker je bilo jemanje brisov pri ženskah po 45.

The decreasing number of patients in the 45-54 year age-group is a result of the mass screening of female population in Slovenia, which has been practised since 1960 on. PAP smears are taken regularly only from pre-menopausal women who attend gynecological examinations because of other problems. Thus, the highest number of invasive cancer in the localized (FIGO 1) stage is detected in the 25-44 year age-

**FIGURE 3: Relative ten-year survival of cervix uteri cancer patients diagnosed in the period 1978 – 87 by age.**



**Figure 4: One- and five-year relative survival rates of cervical cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by period of observation.**



letu starosti manj pogosto, se je odstotek starejših bolnic z invazijskom rakom povečal. Pri njih je bil rak v veliko večjem odstotku odkrit v napredovali razširitvi (FIGO III in IV), kar je tudi posledica bornih znakov v začetku bolezni. Dokler ni znakov, pa se starejše ženske le redkokdaj napotijo po pomoč h ginekologu.

Nakazano zmanjšanje odstotka eno- in triletnega relativnega preživetja v zadnjih dveh obdobjih opazovanja je verjetno posledica nezabeleženih komplikacij po agresivnem radikalnem zdravljenju. Spremljanje bolnic je pomembno predvsem v prvih dveh letih po radikalnem obsevanju, ko se kot posledica obsevanja najčešče pojavijo resne poškodbe sečil in prebavil.

V letih 1963-90 se način zdravljenja ni bistveno spremenil (70). Zdravljenje stadija FIGO IB in včasih tudi IIA je operativno (radikalna histerektomija z medenično limfadenektomijo). Radikalno operativno zdravljenje stadija FIGO IIA je danes manj pogosto, ker ga je nadomestilo obsevanje. Obsevanje je izbor zdravljenja za stadije FIGO II in III. Tudi način obsevanja se ni bistveno spremenil. Kobaltov aparat ( $^{60}\text{Co}$ ) je bil nadomeščen z linearnim pospeševalnikom. V brahiradioterapiji, kot delu radikalnega obsevanja, so radijeve izvire ( $^{226}\text{Ra}$ ), ki so se uporabljali v klasični Manchester metodi, nadomestili cezijeve izviri ( $^{137}\text{Cs}$ ) z uporabo "after-loading" tehnike.

Brez natančnejše podrobne analize bolnic bi težko odgovorili na vprašanje zakaj se je v obdobju 1983-87 odstotek petletnega preživetja bolnic zmanjšal, delni odgovor pa je v manjšem odstotku bolnic s I. stadijem bolezni.

group. The percentage of older patients has increased; in these, however, the disease has been discovered in the stage of advanced dissemination (FIGO III and IV) in a considerably higher percentage, which may be due to the relatively asymptomatic course of the disease in its early stages. Unless warned by symptoms, older women will rarely consider undergoing a gynecological checkup.

The indicated decrease in the relative one- and three-year survival rate of cervical patients in the last two observation periods is most probably due to the rate of unrecognized complications after aggressive radical treatment rather than due to the treatment modality. The follow-up of patients is particularly important in the first two years after radical irradiation, when severe injuries to the urinary and digestive systems can occur as a result of radiation treatment.

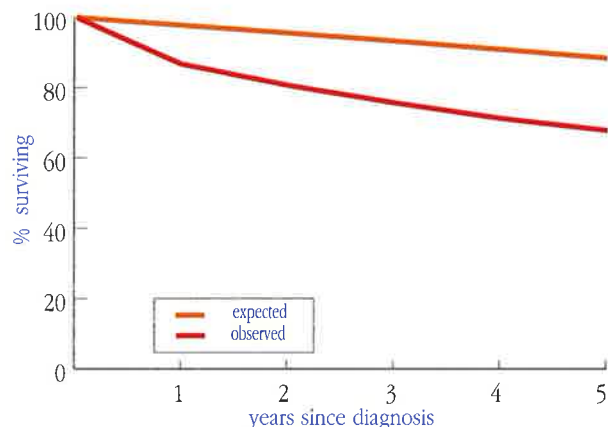
In the period 1963-1990, the treatment approach remained essentially unchanged (70). Thus the treatment of stage FIGO IB and occasionally also IIA is surgery (radical hysterectomy with pelvic lymphadenectomy). Recently, radical surgery for stage FIGO IIA has become less frequent, as it has been replaced by irradiation. The latter modality represents the treatment of choice for FIGO stage II and III of the disease. The mode of radiotherapy has also not been essentially changed. The  $^{60}\text{Co}$  unit was replaced by linear accelerators. In brachytherapy as part of radical radiotherapy,  $^{226}\text{Ra}$  sources used in the standard Manchester technique were replaced by  $^{137}\text{Cs}$  sources, which are suitable for after-load technique.

Only a more detailed analysis of the patients could help to explain reasons for the decrease in five-year survival rates in 1983-87; part of the explanation lies in the lower proportion of patients with stage I of the disease.

# MATERNIČNO TELO

## CORPUS UTERI

MKB 8 / ICD 8: 1820



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnic z rakom materničnega telesa, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of corpus uteri cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom materničnega telesa 3653 žensk. Pri 40 bolnicah (1%) je bil rak ugotovljen ob smrti in zato niso bile vključene v analizo.

V opazovanem 28-letnem obdobju je incidenca raka materničnega telesa zmerno naraščala (30,31,55). V letih 1963-67 je bila groba incidenčna mera 9,5/100.000 žensk, v letih 1988-90 pa 17,1/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 97% v letih 1963-67 na 99% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnic se je spremenila (tabela 1). Odstotek bolnic, starih 45-54 let, se je zmanjšal, odstotek najstarejših se je povečal. Razširjenost bolezni ob diagnozi se je v zadnjih dveh obdobjih nekoliko spremenila, registrirali smo manjši odstotek lokalizirane (FIGO I) in večji odstotek regionalno razširjene bolezni (FIGO II) (tabela 2).

Odstotek petletnega relativnega preživetja se ni statistično značilno spreminjal, odstotek desetletnega pa je nakazano upadal (slika 2, tabela 3). Pri bolnicah do 65. leta starosti je bil odstotek desetletnega preživetja večji kot pri starejših (slika 3).

In the period 1963-90 a total of 3653 patients with corpus uteri cancer were diagnosed in Slovenia. In 40 patients (1%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence increased moderately (30,31,55). In 1963-67 it was 9.5/100,000, in 1988-90 it was 17.1/100,000. The percentage of microscopically confirmed cases increased from 97% in 1963-67 to 99% in 1988-90. The age distribution changed (Table 1). The percentage of women aged 45-54 decreased, and the percentage of elderly women increased. The extent of disease at diagnosis was less favourable in the last two periods of observation (Table 2).

The relative five-year survival rates were stable, the ten-year rates indicated a decrease (Figure 2, Table 3). In relation to age at diagnosis younger patients up till the age of 65 years survived much better than the elderly (Figure 3).

**TABELA 1:** Maternično telo. Bolnice vključene v analizo po starosti in obdobju opazovanja.

**TABLE 1:** Corpus uteri. Patients included in the analysis by age and period of observation.

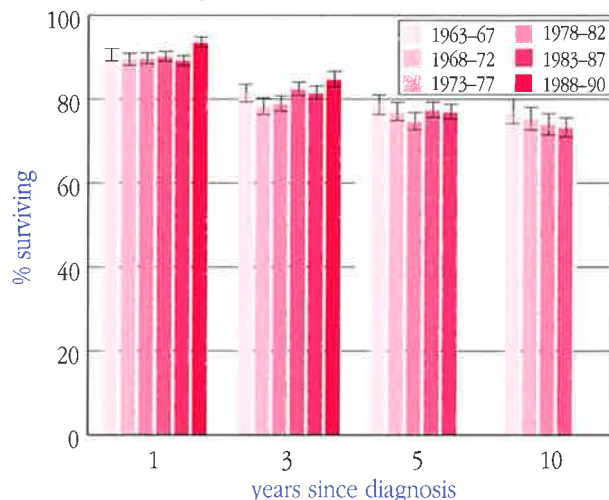
Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
Females 1963-67	407	0.0	9.1	27.8	36.1	22.9	4.2
1968-72	509	0.0	6.7	20.8	38.9	28.3	5.3
1973-77	615	0.0	5.7	24.6	32.4	26.2	11.2
1978-82	721	0.0	3.7	24.7	36.2	25.5	9.8
1983-87	836	0.0	2.0	17.7	39.1	25.5	15.7
1988-90	525	0.0	3.0	19.8	37.5	26.3	13.3
1963-90	3613	0.0	4.6	22.1	36.8	25.8	10.7

**TABELA 2:** Maternično telo. Bolnice vključene v analizo po razširjenosti bolezni in obdobju opazovanja.

**TABLE 2:** Corpus uteri. Patients included in the analysis by extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
Females 1963-67	407	-	-	-	-
1968-72	509	81.1	9.2	7.1	2.0
1973-77	615	78.4	9.8	10.4	1.1
1978-82	721	78.8	8.2	11.0	2.1
1983-87	836	77.4	11.2	10.5	0.8
1988-90	525	77.0	11.8	10.3	1.0
1963-90	3613	78.4	10.0	10.0	1.4

**FIGURE 2: Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with corpus uteri cancer diagnosed in the period 1963 – 90 by sex and period of observation.**



**TABELA 3: Maternično telo. Opazovano in relativno preživetje po obdobju opazovanja.**

**TABLE 3: Corpus uteri. Observed and relative survival by period of observation.**

Period of observation	Observed (%)				Relative (%)			
	Females				Females			
	Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10
1963-67	88.41	76.52	70.83	60.67	89.90	80.72	77.94	76.33
1968-72	86.98	72.94	68.36	57.64	88.66	77.57	76.30	74.64
1973-77	87.02	73.07	65.74	55.72	88.89	78.20	74.10	73.31
1978-82	87.61	76.82	68.80	56.26	89.31	81.68	76.74	72.59
1983-87	86.33	74.90	66.82		88.40	80.74	76.26	
1988-90	90.64	78.38			92.65	83.96		

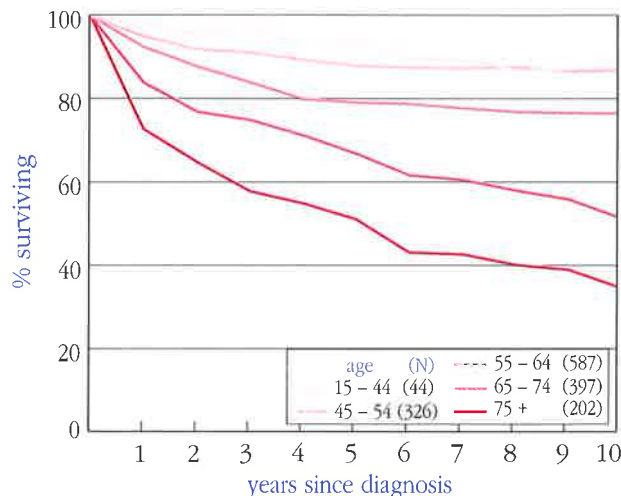
Povečan odstotek bolnic z lokoregionalno razširjeno boleznijo je posledica boljših diagnostičnih postopkov (frakcionirana kiretaža, uporaba ultrazvoka in računalniške tomografije).

Način zdravljenja se v celotnem opazovanem obdobju ni pomembno spremenil (71). V brahiradioterapiji je intrakavitarno zdravljenje z radijem (226 Ra packing) nadomestil cezij

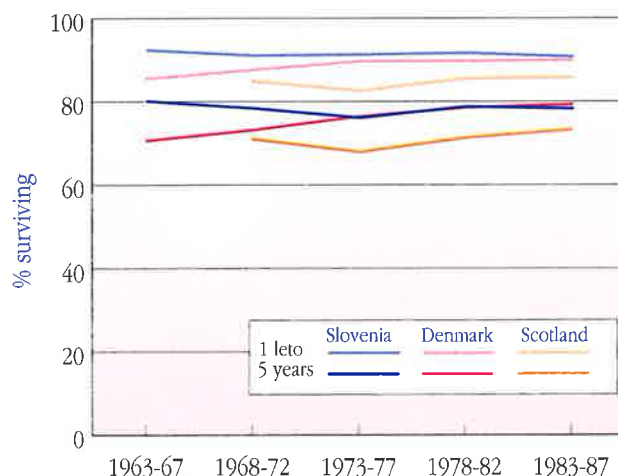
The increased percentage of locoregional disease in the last two time-periods is probably due to better diagnostic procedures (fractional curettage, ultrasonography, computed tomography).

The treatment approach has not changed essentially throughout the observed period (71). In brachytherapy, the intracav-

**FIGURE 3: Relative ten-year survival of corpus uteri cancer patients diagnosed in the period 1978 – 87 by age.**



**Figure 4: One- and five-year relative survival rates of corpus uteri cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by period of observation.**



(<sup>137</sup>Cs packing po Simonovi metodi). Večina v analizo zajetih bolnic je bila najprej operirana in to neglede na stopnjo diferencijacije raka.

Nakazano upadanje desetletnega preživetja si lahko razlagamo z zmanjšanjem radikalnosti operacije in s povečanjem odstotka bolnic z lokoregionalno boleznijo. Zmanjšana radikalnost operacije ne vključuje več popolne medenične limfadenektomije, pač pa le odstranitev povečanih ali klinično sumljivih bezgavk. Vse bolnice s pozitivnimi medeničnimi bezgavkami so po operaciji obsevane. Zapleti po kombiniranem zdravljenju so pogostejši pri starejših bolnicah in so lahko usodni, če niso odkriti pravočasno.

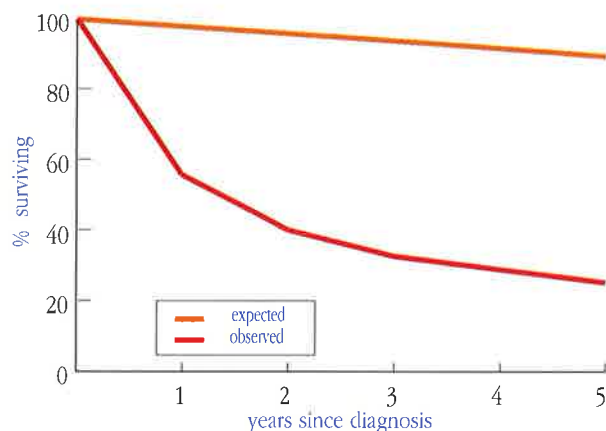
itary treatment with <sup>226</sup>Ra packing was replaced by <sup>137</sup>Cs packing according to Simon's method. The majority of patients analysed were first treated by surgery, irrespective of the degree of cancer differentiation.

The indicated decrease in 10-year survival rates could be explained by less radical surgeries and the higher proportion of patients with locoregional disease. Surgery has become less radical because, instead of total pelvic lymphadenectomy, it includes only the removal of enlarged and clinically suspect lymph nodes. All patients with positive pelvic lymph nodes receive postoperative radiotherapy. Complications after combined therapy are more frequent in older patients and can be fatal if not detected in time.

# JAJČNIKI

## OVARIES

MKB 8 / ICD 8: 1830



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnic z rakom jajčnikov, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of ovarian cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom jajčnikov 3275 žensk. Pri 123 bolnicah (4%) je bil rak ugotovljen ob smrti in zato niso bile vključene v analizo.

V opazovanem 28-letnem obdobju je incidenca raka jajčnikov naraščala do leta 1975, nato je bila ustaljena (30,31). V letih 1963-67 je bila groba incidenčna mera 10,6/100.000 žensk, v letih 1988-90 pa 14,3/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal z 88% v letih 1963-67 na 96% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnic se je spremenila (tabela 1). Odstotek bolnic, starih 45-54 let, se je zmanjšal, odstotek najstarejših se je povečal. Razširjenost bolezni ob diagnozi se je spreminjala (tabela 2). V letih 1978-87 smo prehodno registrirali manjši odstotek lokalizirane (FIGO IA in IB) in večji odstotek regionalno razširjene bolezni (FIGO IIA in IIB).

In the period 1963-90 a total of 3275 patients with ovarian cancer were diagnosed in Slovenia. In 123 patients (4%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence increased up till 1975, and was rather stable later on (30,31). In 1963-67 it was 10.6/100,000, and in 1988-90 it was 14.3/100,000. The percentage of microscopically confirmed cases increased from 88% in 1963-67 to 96% in 1988-90. The age distribution changed (Table 1). The percentage of women aged 45-54 decreased, and the percentage of elderly women increased. The extent of disease at diagnosis was less favourable in the last two periods of observation (Table 2). In 1978-87 the percentage of localized stage (FIGO IA, IB) decreased, and that of the regional stage increased (FIGO IIA, IIB).

**TABELA 1:** Jajčniki. Bolnice vključene v analizo po starosti in obdobju opazovanja.

**TABLE 1:** Ovaries. Patients included in the analysis sex, age and period of observation.

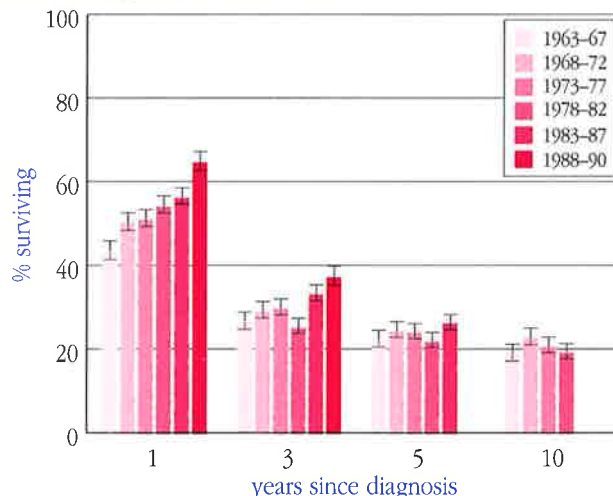
Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
Females 1963-67	446	0.2	17.7	23.8	35.0	17.5	5.8
1968-72	524	0.8	17.0	24.4	28.6	22.3	6.9
1973-77	566	0.9	13.1	28.4	24.7	23.7	9.2
1978-82	559	0.2	14.0	27.9	23.3	25.6	9.1
1983-87	634	0.3	11.5	22.4	30.0	21.9	13.9
1988-90	423	0.5	12.8	21.0	28.6	21.0	16.1
1963-90	3152	0.5	14.2	24.8	28.1	22.2	10.2

**TABELA 2:** Jajčniki. Bolnice vključene v analizo po razširjenosti bolezni in obdobju opazovanja.

**TABLE 2:** Ovaries. Patients included in the analysis by extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
Females 1963-67	446	-	-	-	-
1968-72	524	23.5	13.9	58.6	4.0
1973-77	566	16.1	10.1	69.3	4.6
1978-82	559	11.8	14.1	71.2	2.9
1983-87	634	12.6	14.2	68.9	4.3
1988-90	423	15.1	12.8	69.0	3.1
1963-90	3152	15.7	13.0	67.5	3.8

**FIGURE 2: Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with ovarian cancer diagnosed in the period 1963 – 90 by period of observation.**



**TABELA 3: Jajčniki. Opazovano in relativno preživetje po obdobju opazovanja.**

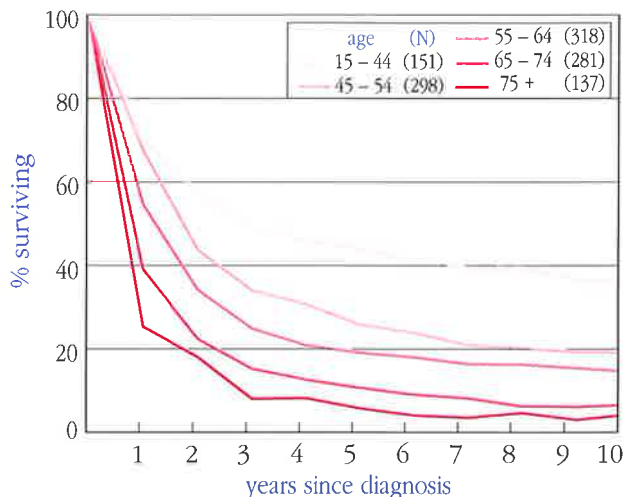
**TABLE 3: Ovaries. Observed and relative survival by period of observation.**

Period of observation	Observed (%)				Relative (%)			
	Females				Females			
	Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10
1963-67	42.44	25.10	20.31	15.29	43.12	26.42	22.26	18.94
1968-72	49.09	27.34	21.95	18.07	49.98	28.94	24.27	22.74
1973-77	49.82	27.96	21.55	16.21	50.80	29.71	23.98	20.62
1978-82	52.92	23.77	19.77	15.24	53.88	25.16	21.87	19.22
1983-87	54.76	30.96	23.38	-	55.97	33.13	26.30	-
1988-90	63.08	34.86	-	-	64.38	37.18	-	-

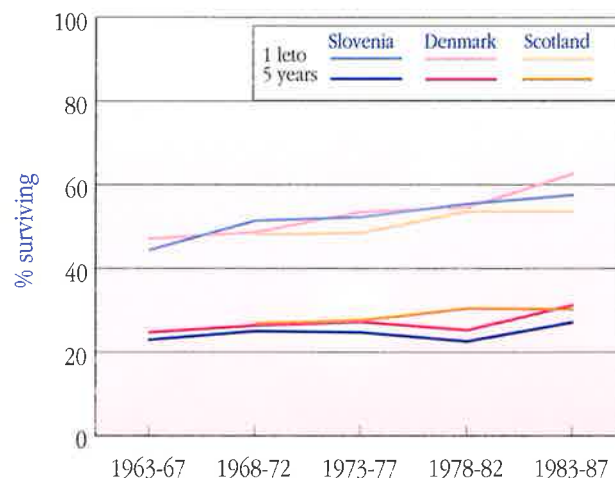
Odstotek relativnega eno- in triletnega preživetja se je statistično značilno povečal, nakazano se je povečal tudi odstotek petletnega preživetja (slika 2, tabela 3). S starostjo so se odstotki relativnega preživetja zmanjševali (slika 3).

The relative one- and three-year survival rate increased significantly with time, while an increase of the five-year survival rate was indicated (Figure 2, Table 3). In relation to age at diagnosis younger patients survived much better than the elderly (Figure 3).

**FIGURE 3: Relative ten-year survival of ovarian cancer patients diagnosed in the period 1978 – 87 by age.**



**Figure 4: One- and five-year relative survival rates of ovarian cancer patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by period of observation.**



Odstotek mikroskopsko potrjenih primerov se je povečal z uvedbo laparoskopije, ki je omogočala histološko preiskavo tumorjev jajčnikov tudi pri starejših bolnicah v slabem splošnem stanju.

V letih 1963-90 so se načini zdravljenja spremenili (72). Citostatik cisplatinum je zmanjšal pomen obsevanja. Kemoterapija je še vedno najpomembnejša v nadaljevanju zdravljenja napredovalega raka jajčnikov. Čeprav ni povsem zanesljivo, da obsevanje pomembno vpliva na preživetje, se utegne v posebnih primerih uveljaviti kot pomemben način zdravljenja.

Statistično značilno povečanje eno- in triletnega preživetja je posledica radikalnejše operacije in agresivnejše kemoterapije. Včasih se neradikalno operiran rak po zdravljenju s cisplatinom izredno zmanjša, kar omogoča odloženo operacijo za odstranitev preostanka raka ali vsaj resekcijo črevesa za olajšanje težav. Vsi ti posegi ne zvečujejo odstotka petletnega preživetja, zato se deloma opuščajo, oziroma se uporabljajo le v posebnih primerih.

Boljše preživetje pri mlajših bolnicah je razumljivo, saj sta pri njih možni radikalnejša operacija in agresivnejša kemoterapija.

The percentage of microscopically confirmed cases has increased by the use of laparoscopy, which enabled histological examination of ovarian tumors even in older patients in poor general condition.

In the years 1963-90 the treatment approach was changed (72). Cisplatinum based chemotherapy diminished the role of irradiation. Chemotherapy still remains the most important modality in the treatment of advanced ovarian cancer. Although there is no clear evidence that radiation therapy would significantly influence survival, it may still prove to be an important therapeutic modality in selected cases.

The statistically significant increase in one- and three-year survival is due to more radical surgery and aggressive chemotherapy. Sometimes, a non-radically resected tumor can be markedly reduced by cisplatinum-based chemotherapy, which renders feasible postponed surgery for residual tumor removal, or at least facilitates palliative resection of the bowel for elimination of symptoms. Nevertheless, all these interventions fail to increase the five-year survival rates, and therefore they are being partly abandoned or used in selected cases only.

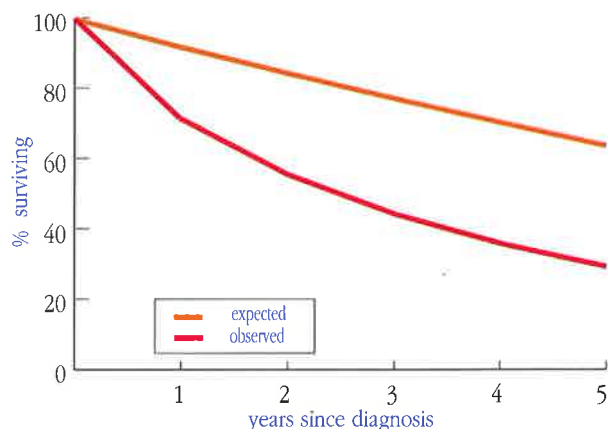
The better survival of younger patients is not surprising, considering their greater eligibility for radical surgery and aggressive chemotherapy.



## PROSTATA

## PROSTATE

MKB 8 / ICD 8: 185



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z rakom prostate, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of prostate cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom prostate 5143 moških. Pri 658 bolnikih (13%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka prostate naraščala, porast je bil največji v 60. letih (30,31). V letih 1963-67 je bila groba incidenčna mera 15,7/100.000 moških, v letih 1988-90 pa 24,5/100.000 moških. Odstotek mikroskopsko potrjenih primerov se je povečal z 31% v letih 1963-67 na 85% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spremenila (tabela 1). V vsakem zaporednem obdobju je bil odstotek starejših večji. Razširitev bolezni ob ugotovitvi se ni veliko spremenila (tabela 2).

Odstotek petletnega relativnega preživetja se je statistično značilno povečal (slika 2, tabela 3). Glede na starost je bilo relativno petletno preživetje boljše pri bolnikih do 74. leta starosti kot pri starejših (slika 3).

In the period 1963-90 a total of 5143 patients with prostate cancer were diagnosed in Slovenia. In 658 patients (13%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence increased; the increase was steepest in the 60's (30,31). In 1963-67 it was 15.7/100,000, in 1988-90 it was 24.5/100,000. The percentage of microscopically confirmed cases increased from 31% in 1963-67 to 85% in 1988-90. The age distribution changed (Table 1). The percentage of the eldest age-group increased. The extent of disease at diagnosis did not change very much (Table 2). The relative five year survival rate increased significantly (Figure 2, Table 3). In relation to age at diagnosis patients up till the age of 74 years survived better than the elderly (Figure 3).

**TABELA 1:** Prostata. Bolniki vključeni v analizo po starosti in obdobju opazovanja.

**TABLE 1:** Prostate. Patients included in the analysis by age and period of observation.

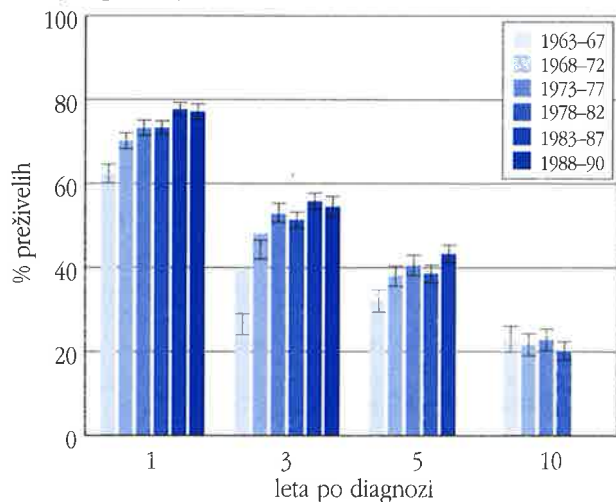
Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
Males 1963-67	524	0.0	1.3	1.7	20.2	41.8	34.9
1968-72	694	0.1	0.0	1.2	19.9	46.3	32.6
1973-77	723	0.0	0.3	2.1	15.4	46.9	35.4
1978-82	930	0.0	0.4	2.7	12.5	45.7	38.7
1983-87	992	0.0	0.1	2.2	12.9	35.7	49.1
1988-90	622	0.0	0.3	2.6	13.3	33.4	50.3
1963-90	4485	0.0	0.4	2.1	15.2	41.6	40.7

**TABELA 2:** Prostata. Bolniki vključeni v analizo po razširjenosti bolezni in obdobju opazovanja.

**TABLE 2:** Prostate. Patients included in the analysis by extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
Males 1963-67	524	-	-	-	-
1968-72	694	35.7	24.5	20.5	19.0
1973-77	723	46.3	19.4	22.8	11.5
1978-82	930	53.7	13.7	19.2	13.4
1983-87	992	52.2	8.5	20.0	19.4
1988-90	622	42.9	6.3	22.5	28.3
1963-90	4485	47.1	14.1	20.8	17.9

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom prostate zbolelih v letih 1963 – 90 po obdobjih opazovanja.



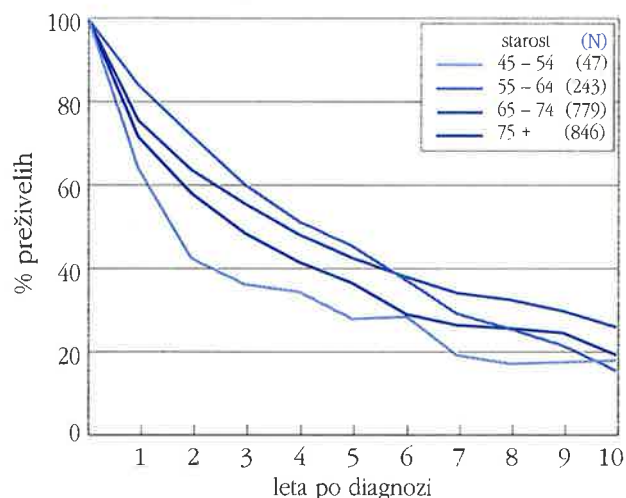
**TABELA 3:** Prostata. Opazovano in relativno preživetje po obdobju opazovanja.

**TABLE 3:** Prostate. Observed and relative survival by period of observation.

Period of observation	Observed (%)				Relative (%)			
	Males				Males			
	Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10
1963-67	57.09	30.65	20.69	8.81	61.71	39.19	31.80	22.87
1968-72	64.27	37.26	24.68	8.48	69.49	47.65	37.77	21.49
1973-77	67.02	41.13	26.47	9.05	72.46	52.36	40.14	22.61
1978-82	67.21	40.09	25.24	7.92	72.56	50.93	38.25	20.04
1983-87	70.95	42.86	27.50		76.94	55.26	42.88	
1988-90	70.56	42.04			76.35	53.97		

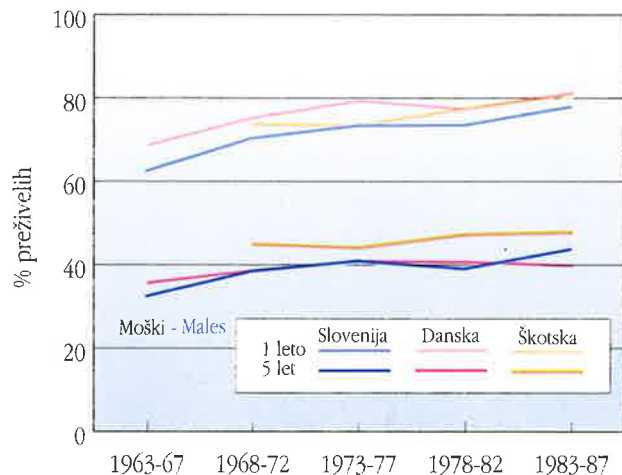
Bolniki z rakom prostate običajno zaradi težav praviloma najprej urologa. Za uspeh njihovega zdravljenja je zato v prvi vrsti potrebna mreža strokovno usposobljenih in opremljenih uroloških centrov, ki jim pri delu pomagajo druge, predvsem diagnostične dejavnosti (laboratoriji, oddelki za nuklearno medicino, itd.). Razmere v Sloveniji v letih 1963-90 so bile nakazane že pri obravnavi raka mehurja.

**SLIKA 3:** Relativno desetletno preživetje bolnikov z rakom prostate zbolelih v letih 1978 – 87 po starosti.



When in search of medical help, most patients with prostatic cancer first see an urologist. Therefore, the success of their treatment depends in the first place on an effective network of adequately equipped urological centers run by competent specialists, which should be supported by other, particularly diagnostic services (laboratories, departments of nuclear medicine etc.). The conditions in Slovenia during the years

**Slika 4:** Eno- in petletno relativno preživetje bolnikov z rakom prostate, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po obdobjih opazovanja.



Raka na prostati je bilo mogoče histološko potrditi od začetka obravnavanega obdobja, pogosteje pa po uvedbi transuretralnih resekcij (TUR) po letu 1968 in igelnih biopsij prostate po letu 1970. To dejstvo pojasni porast incidence in delež mikroskopsko potrjenih rakov.

Na vse nadaljne ukrepe (dodatne preiskave in zdravljenje) je vplivalo mnenje mnogih zdravnikov, da je rak prostate predvsem urološki problem. Zato lahko sedaj ugotovljamo, da so urologi uvajali in uporabljali predvsem operative metode zdravljenja: radikalno prostatektomijo, TUR, zdravljenje s kriokirurgijo in v zadnjih letih ponovno radikalno operacijo. Pri tem niso sistematično določali obsega bolezni pred prvim zdravljenjem. Iz varnostnih razlogov zaradi možnih metastaz so pogosto pričeli z navidez enostavno hormonsko terapijo. V prvi letih z estrogeni in kastracijo, v 80. letih tudi z antiandrogeni in LHRH-agonisti. Na obsevanje so bili bolniki napoteni praviloma kasneje, tudi po več letih, ko je bolezen napredovala in je bilo možno le še paliativno ukrepanje.

Samostojnost pri odločanju o načinu zdravljenja teh bolnikov v posameznih centrih, s tem pa neenotnost, je bila v Sloveniji pomembna značilnost v obdobju 1963-90. Zato tudi nismo prodrli s predlogom skupne doktrine za raka prostate, ki smo ga pripravili in predstavili na 5. podiplomskem izobraževalnem dnevu iz klinične onkologije na Onkološkem inštitutu v Ljubljani leta 1985 (73).

1963-1990 have already been outlined in the chapter on bladder cancer.

Histological verification of prostatic cancer was possible already at the beginning of the period observed, though this method became used more widely after the introduction of transurethral resections (TUR) in 1968, and fine-needle biopsies of the prostate (after 1970) used for the microscopic verification of pathological processes. This fact may explain the increase in the incidence and rate of microscopically confirmed cancers.

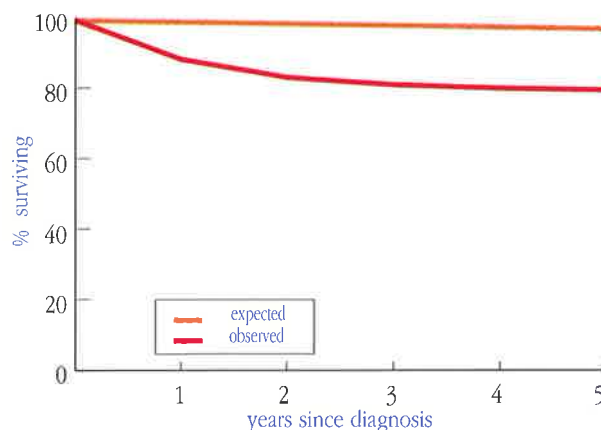
All further interventions (additional examinations and treatment) were influenced by the belief of many physicians who considered prostatic cancer an urological problem. Thus it can be concluded that the urologists largely gave preference to surgical treatment: radical prostatectomy, TUR, cryosurgery, and recently again radical surgery. Systematic staging of the disease prior to primary therapy was not practised. For safety reasons and the control of possible metastatic spread, hormonal treatment was introduced. In the beginning, this consisted of estrogen treatment and castration, and in the 80's also of anti-androgens and LHRH-agonists. Generally, the patients were referred for radiation therapy afterwards - sometimes even a few years later - when the disease had already advanced, thus ruling out any but palliative treatment.

The tendency of individual centers to make independent decisions concerning the method of treatment to be used in these patients, and the diversity of opinions associated with that, was a characteristic feature in the period 1963-1990 in Slovenia. This also explains why our proposals for a uniform doctrinary approach to prostatic cancer treatment, which was developed and presented at the 5th Postgraduate Education Day in Clinical Oncology held at the Institute of Oncology in Ljubljana in 1985, was not accepted (73).

## MODA

## TESTIS

MKB 8 / ICD 8: 186



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z rakom moda, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of testicular cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za rakom mod 741 moških. Pri osmih (1%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca raka mod naraščala, porast je bil strmejši v 80. letih (30,74). V letih 1963-67 je bila groba incidenčna mera 1,8/100.000 moških; v letih 1988-90 pa 4,8/100.000. Odstotek mikroskopsko potrjenih primerov se je povečal od 96% v letih 1963-67 na 99% v letih 1988-90. Natančno šifriranje posameznih histoloških vrst raka mod, ki so pomemben napovedni dejavnik, je bilo v Registru vpeljana z uvedbo klasifikacije ICD-O leta 1983. Zato je bila analiza glede na histološko vrsto opravljena ločeno le za zadnji dve obdobji opazovanja.

Starostna porazdelitev bolnikov se je spreminjala (tabeli 1 in 1a). V zadnjih obdobjih opazovanja se je povečal odstotek zbolelih v starosti 15-44 let. V tej starostni skupini je bilo tudi največ bolnikov.

Porazdelitev bolnikov glede na razširjenost bolezni ob ugotovitvi se ni veliko spreminjala (tabeli 2 in 2a). Pri bolnikih s

In the period 1963-90 a total of 741 patients with testicular cancer were diagnosed in Slovenia. In eight patients (1%) cancer was diagnosed at death and they are not included in the analysis.

In this time-period the incidence increased, the increase was steepest in the 80's (30,74). In 1963-67 it was 1.8/100,000, in 1988-90 it was 4.8/100,000. The percentage of microscopically confirmed cases increased from 96% in 1963-67 to 99% in 1988-90. A detailed coding of histology was introduced with the use of the ICD-O in 1983. Hence, the data are presented by histology only for the last two periods of observation.

The age distribution changed (Table 1, Table 1a). The percentage of the age group 15-44 years increased. The majority of patients were diagnosed in this age group.

The distribution of patients according to the extent of disease at diagnosis has remained relatively stable (Table 2 and 2a). Seminoma patients presented with localized disease at a significantly higher percentage (64%) than non-seminoma patients (35%). This can be explained by a specific feature of

TABELA 1: Moda. Bolniki vključeni v analizo po starosti in obdobju opazovanja.

TABLE 1: Testis. Patients included in the analysis by age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
Males 1963-67	71	2.8	67.6	11.3	9.9	5.6	2.8
1968-72	80	1.3	66.3	12.5	10.0	2.5	7.5
1973-77	97	0.0	77.3	9.3	3.1	4.1	6.2
1978-82	143	3.5	81.1	7.7	1.4	4.2	2.1
1983-87	204	1.5	84.3	10.3	2.5	0.5	1.0
1988-90	140	1.4	80.0	9.3	7.1	1.4	0.7
1963-90	735	1.8	78.4	9.8	4.8	2.6	2.7

TABELA 1a: Moda. Bolniki, vključeni v analizo po histološki vrsti, starosti in obdobju opazovanja.

TABLE 1a: Testis. Patients included in the analysis by histology, age and period of observation.

Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
Seminoma	1983-87	84	-	78.6	17.9	2.4	-	1.2
	1988-90	73	-	76.7	15.1	8.2	-	-
	1983-90	157	-	77.7	16.6	5.1	-	0.6
Non-seminoma	1983-87	120	2.5	88.3	5.0	2.5	0.8	0.8
	1988-90	67	3.0	83.6	3.0	6.0	3.0	1.5
	1983-90	187	2.7	86.6	4.3	3.7	1.6	1.1

**TABELA 2:** Moda. Bolniki vključeni v analizo po razširjenosti bolezni in obdobju opazovanja.

**TABLE 2:** Testis. Patients included in the analysis by extent of disease and period observation.

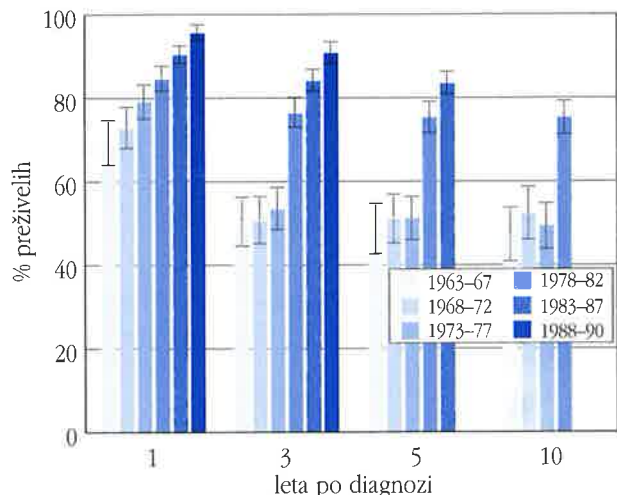
Period of observation	No.	Extent of disease (%)				
		Localized	Regional	Distant	Unknown	
Males	1963-67	71	-	-	-	-
	1968-72	80	52.5	26.3	18.8	2.5
	1973-77	97	45.4	25.8	21.6	7.2
	1978-82	143	46.2	30.1	21.0	2.8
	1983-87	204	50.0	28.4	20.6	1.0
	1988-90	140	47.1	39.3	13.6	0.0
	1963-90	735	48.2	30.4	19.1	2.3

**TABELA 2a:** Moda. Bolniki vključeni v analizo po histološki vrsti, razširjenosti bolezni in obdobju opazovanja.

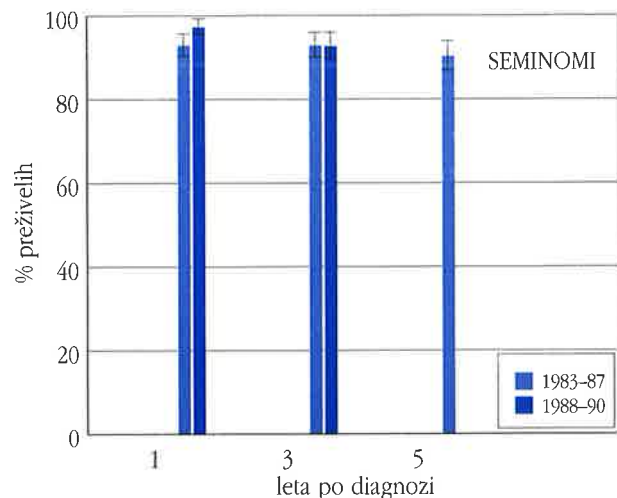
**TABLE 2a:** Testis. Patients included in the analysis by histology, extent of disease and period observation.

Period of observation	No.	Extent of disease (%)				
		Localized	Regional	Distant	Unknown	
Semi-noma	1983-87	84	22.5	22.1	48.6	6.8
	1988-90	73	22.3	26.3	37.9	10.6
	1983-90	157	23.7	23.9	43.8	8.5
Non-seminoma	1983-87	120	38.3	30.8	30	0.8
	1988-90	67	31.3	44.8	23.9	0.0
	1983-90	187	35.8	35.8	27.8	0.5

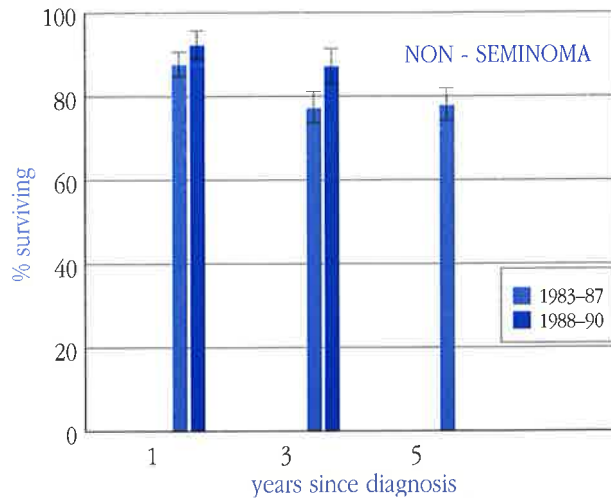
**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z rakom mod zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**SLIKA 2a:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov rakom mod zbolelih v letih 1983 – 90 po histološki vrsti in obdobjih opazovanja.



**FIGURE 2b:** Relative 1, 3 and 5 year survival with 95 % confidence interval of patients with testicular cancer diagnosed in the period 1983 – 90 by histology and period of observation.

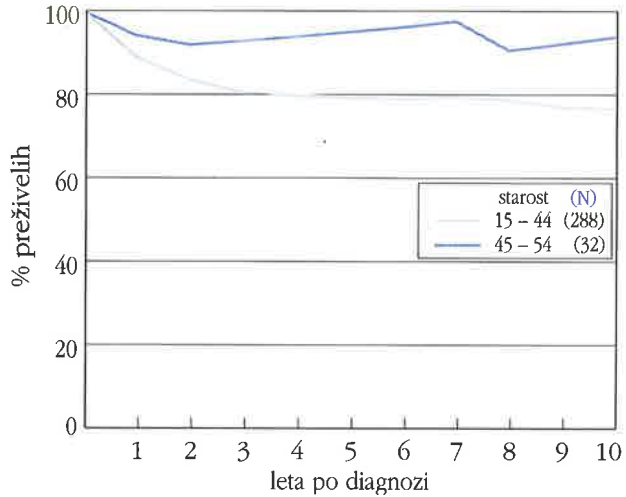


**TABELA 3: Moda. Opazovano in relativno preživetje po obdobju opazovanja.**

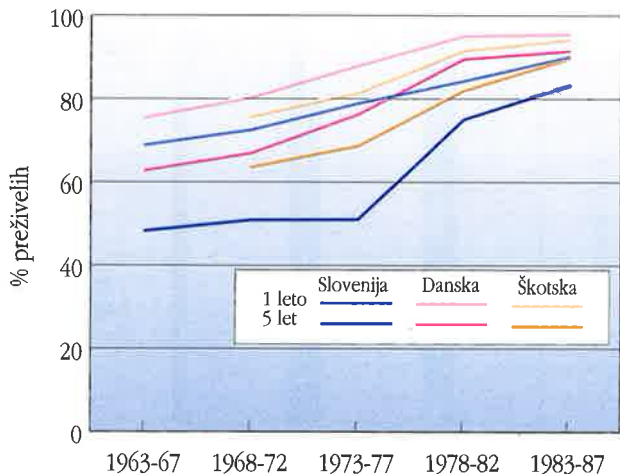
**TABLE 3: Testis. Observed and relative survival by period of observation.**

Period of observation	Observed (%)				Relative (%)			
	Males				Males			
	Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10
1963-67	67.61	47.81	44.91	40.57	68.54	49.78	48.07	46.74
1968-72	70.89	47.69	46.40	43.78	72.12	50.26	50.64	51.83
1973-77	77.32	50.84	47.60	43.27	78.44	52.90	50.74	48.98
1978-82	83.16	73.93	71.77	68.90	83.79	75.64	74.62	74.64
1983-87	89.16	82.17	80.66		89.57	83.36	82.71	
1988-90	94.22	88.43			94.76	89.98		

**SLIKA 3: Relativno desetletno preživetje bolnikov z rakom moda zbolelih v letih 1978 – 87 po starosti.**



**Slika 4: Eno- in petletno relativno preživetje bolnikov z rakom moda, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po obdobjih opazovanja.**



seminomi je bila lokalizirana bolezen ugotovljena v značilno višjem odstotku (64%) kot pri bolnikih z neseminomi (35%). To si lahko razložimo z značilno lastnostjo seminomov, da rastejo lokalno počasi in da zasevajo pozno.

Odstotek eno-, tri- in petletnega preživetja se je skozi vse 28-letno obdobje opazovanja statistično značilno večal. Največji porast tri-, pet- in desetletnega preživetja je bil v letih 1978-82 (slika 2, tabela 3), ko so v redno zdravljenje uvedli cisplatin.

Bolniki, ki so zboleli za seminomom, so imeli statistično značilno večji odstotek eno-, tri- in petletnega relativnega preživetja (po petih letih jih je preživel več kot 90%) kot tisti z neseminomi (sliki 2a, 2b). V Sloveniji so bolnike s seminomom z minimalno boleznijo po operativni odstranitvi tumorja obsevali, bolnike z napredovalo boleznijo pa zdravili s citostatiki (74,75). Po letu 1983 se odstotek triletnega preživetja ni povečal.

Bolniki, ki so zboleli za neseminomom, so imeli relativno petletno preživetje 77%. Odstotek triletnega preživetja se je v obdobju 1988-90 povečal za 10%, ko sta bila v shemo zdravljenja ob cisplatinu uvedena dva nova citostatika, etopozid in ifosfamid.

seminomas: slow local growth and late dissemination. One-, three- and five-year survival rates increased significantly throughout the 28-year observation period. The greatest increase in three-, five- and ten-year survival was noted in the years 1978-82 (Figure 2, Table 3), when cisplatin was made part of regular therapy.

The one-, three- and five-year relative survival rates of patients with seminoma were statistically significantly higher (over 90% of them survived 5 years and more) than those of non-seminoma patients (Figures 2a, 2b). In Slovenia, seminoma patients with minimal disease were irradiated after orchidectomy while those with advanced disease received chemotherapy (74,75). After 1983, the three-year survival rate did not increase.

The relative 5-year survival of non-seminoma patients was 77%. In the period 1988-90, when two new cytotoxic agents - etoposide and ifosfamid - were added to cisplatin-based chemotherapy, the three-year survival rate increased by 10%.

# NE-HODGKINOVIM MALIGNIM LIMFOMAM

## NON-HODGKIN'S MALIGNANT LYMPHOMA

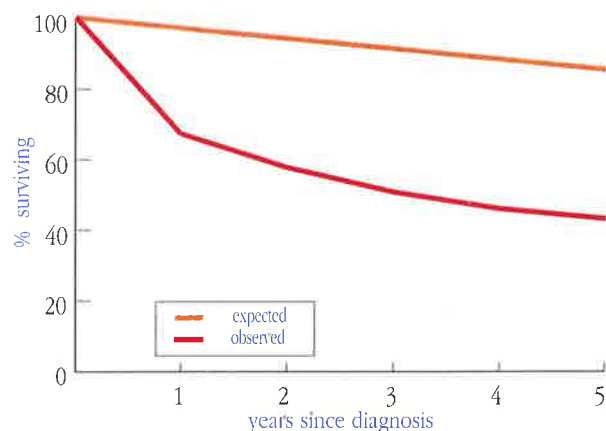
V obdobju 1963-90 je zbolelo v Sloveniji za ne-Hodgkinovimi malignimi limfomi (NHL) 1134 moških in 997 žensk. Za nodalno obliko bolezni je zbolelo 781 moških (69%) in 647 žensk (72%), ostali so zboleli za ekstranodalno obliko, največkrat v želodcu in žrelu. Pri 83 bolnikih (4%) je bila bolezen ugotovljena ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca NHL naraščala pri obeh spolih po 55. letu starosti (30,76). V letih 1963-67 je bila groba incidenčna mera 3/100.000 moških in 2,2/100.000 žensk; v letih 1988-90 pa 6,9/100.000 moških in 5,7/100.000 žensk. Delež mikroskopsko potrjenih primerov se je povečal od 97% v letih 1963-67 na 99% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1). Delež bolnikov v najstarejši starostni skupini se je v zadnjih obdobjih večal. Povprečni delež otrok do 14. leta starosti je bil večji pri moških (7,2%) kot pri ženskah (3,3%). V povprečju je bilo največ bolnikov v starosti 55-74 let. Porazdelitev bolnikov glede na razširjenost bolezni ob diagnozi se je po obdobjih spreminjala (tabela 2).

**TABELA 1: Ne-Hodgkinovi limfomi. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.**

**TABLE 1: NHL. Patients included in the analysis by sex, age and period of observation.**

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b>							
1963-67	120	7.5	31.7	16.7	17.5	20.8	5.8
1968-72	127	9.4	23.6	11.8	26.8	23.6	4.7
1973-77	189	7.9	21.7	15.3	19.0	25.9	10.1
1978-82	217	6.9	22.1	17.5	19.8	22.6	11.1
1983-87	249	7.6	21.7	16.5	24.1	18.1	12.0
1988-90	198	5.6	18.7	15.7	27.8	15.7	16.7
1963-90	1100	7.4	22.5	15.8	22.6	20.8	10.8
<b>Females</b>							
1963-67	95	6.3	26.3	11.6	21.1	25.3	9.5
1968-72	110	3.6	16.4	8.2	26.4	30.9	14.5
1973-77	141	3.5	14.2	9.9	23.4	34.0	14.9
1978-82	178	2.2	9.6	14.6	20.8	30.9	21.9
1983-87	250	2.4	16.4	14.0	19.6	24.0	23.6
1988-90	174	0.6	13.2	12.1	21.3	28.7	24.1
1963-90	948	2.7	15.2	12.2	21.6	28.6	19.6



**SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov ne-Hodgkinovimi limfomi, zbolelih v letih 1983 – 87 v Sloveniji.**

**FIGURE 1: Observed and expected five - year survival of NHL patients diagnosed in the period 1983 – 87 in Slovenia.**

In the period 1963-90 a total of 1134 male and 997 female patients with non-Hodgkin's malignant lymphoma (NHL) were diagnosed in Slovenia; 781 males (69%) and 647 females (72%) with nodal, and the rest with extra-nodal disease, the most frequent sites being the stomach and the pharynx. In 83 patients (4%) disease was diagnosed at death and they are not included in the analysis.

In the observed 28-year time-period the incidence of all NHL increased in both sexes after the age of 55 years (30,76). In 1963-67 the crude rate was 3/100,000 males and 2.2/100,000 females; in 1988-90 it was 6.9/100,000 males and 7.5/100,000 females. The percentage of microscopically confirmed nodal cases increased from 97% in 1963-67 to 99% in 1988-90. The age distribution changed (Table 1). The percentage of the eldest age group increased in both sexes. The average percentage of children was 7.2% in male and 3.3% in female. Most patients were aged 55-74 years. The extent of the disease at diagnosis varied in different time-periods without any regularity (Table 2).

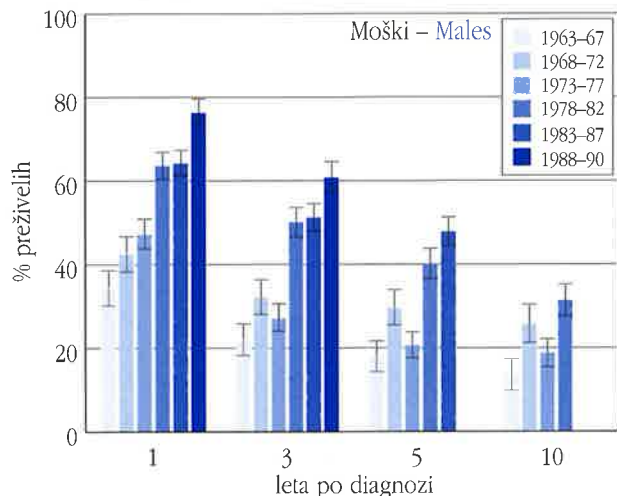
**TABELA 2: Ne-Hodgkinovi limfomi. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.**

**TABLE 2: NHL. Patients included in the analysis by sex, extent of disease and period of observation.**

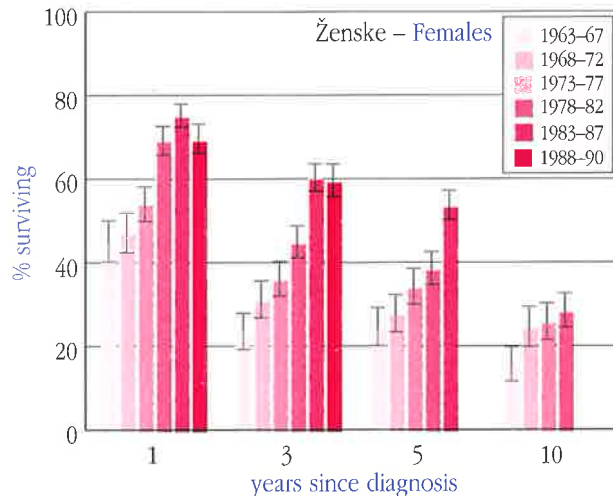
Period of observation	No.	Extent of disease - Ann-Arbor (%)			
		I	II	III + IV	Unknown
<b>Males</b>					
1963-67	120	-	-	-	-
1968-72	127	21.9	25.0	50.8	2.3
1973-77	189	16.9	23.3	57.7	2.1
1978-82	217	18.4	30.0	47.0	4.6
1983-87	249	22.5	22.1	48.6	6.8
1988-90	198	25.3	26.3	37.9	10.6
1963-90	1100	21.0	25.3	48.1	5.6
<b>Females</b>					
1963-67	95	-	-	-	-
1968-72	110	26.4	27.3	39.1	7.3
1973-77	141	27.7	24.1	45.4	2.8
1978-82	178	25.8	24.7	47.2	2.2
1983-87	250	28.8	18.8	47.6	4.8
1988-90	174	20.7	30.5	42.0	6.9
1963-90	948	26.0	24.4	44.9	4.7



**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z ne-Hodgkinovimi malignimi limfomi zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with NHL diagnosed in the period 1963 – 90 by sex and period of observation.



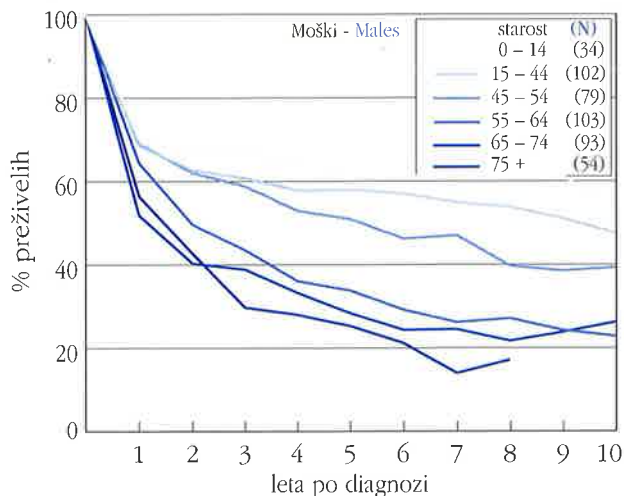
**TABELA 3:** Ne-Hodgkinovi limfomi. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** NHL. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	33.05	20.10	15.54	10.05	43.62	21.81	21.81	12.00	33.91	21.80	17.86	13.58	44.55	23.29	24.46	15.45
1968-72	40.95	29.13	25.20	18.41	45.46	28.18	23.64	17.27	42.17	31.90	29.40	25.49	46.73	30.77	27.57	24.38
1973-77	45.21	24.28	17.27	12.95	52.17	32.61	28.99	18.12	46.74	26.85	20.49	18.63	53.69	35.68	33.88	25.58
1978-82	61.11	45.21	33.91	22.13	66.67	40.46	32.48	19.37	63.01	49.65	39.79	31.10	68.65	44.38	38.22	28.15
1983-87	61.69	46.25	40.47		72.29	54.54	45.25		63.61	50.77	47.42		74.49	59.78	53.10	
1988-90	73.10	54.32			66.67	53.45			75.59	60.24			68.79	59.00		

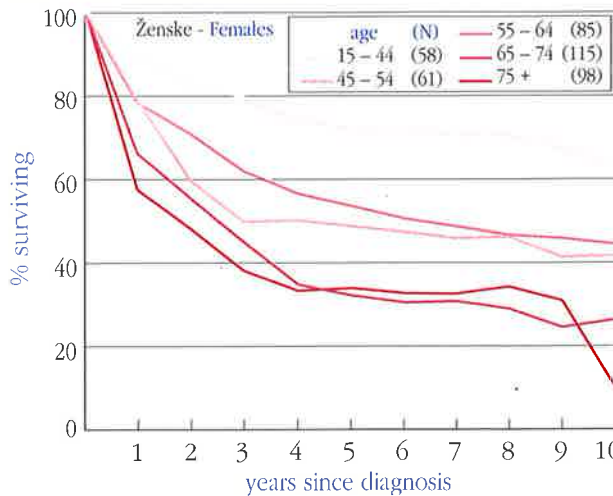
Statistično značilno se je povečal odstotek ena-, tri- in petletnega preživetja v obdobju 1973-77 (slika 2, tabela 3). Preživetje je bilo boljše pri mlajših bolnikih (slika 3). NHL so raznolika skupina bolezenskih entot, ki se kaže v morfološki in imunofenotipski raznolikosti ter v različnem poteku bolezni, odzivu na zdravljenje in prognozi.

A significant increase in relative one-, three-, and five-year survival rate in both sexes was observed in 1973-77 (Figure 2, Table 3). In relation to age at diagnosis younger patients survived better (Figure 3). NHL form a very heterogeneous group of pathological entities, as is evident from their morphological and immunophenotypical diversity, as well as from differences in the course of disease, treatment response and prognosis.

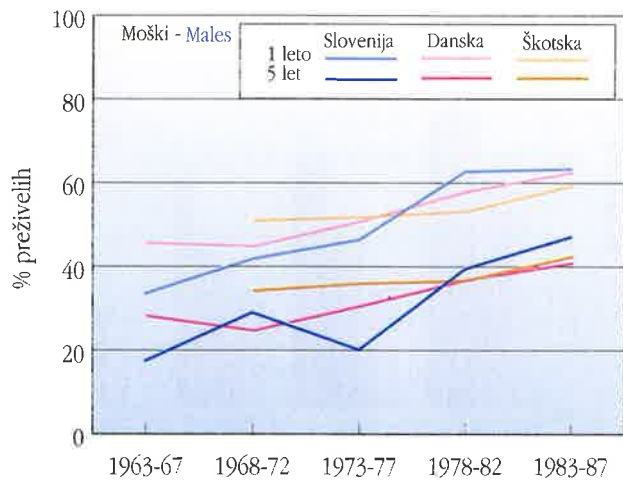
**SLIKA 3:** Relativno desetletno preživetje bolnikov z ne-Hodgkinovimi malignimi limfomi zbolelih v letih 1978 – 87 po spolu in starosti.



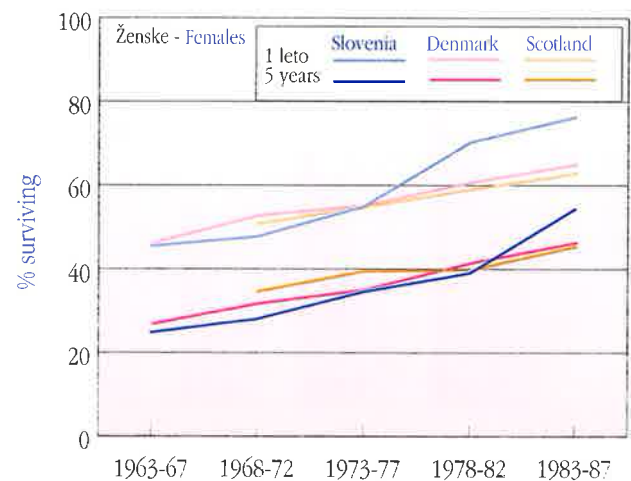
**FIGURE 3:** Relative ten-year survival of NHL patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z ne-Hodgkinovimi malignimi limfomi v Sloveniji, na Danskem in na Škotskem v letih 1963-87 po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of non-Hodgkin's lymphoma patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



Pred več kot 30. leti je večina bolnikov z NHL umrla zaradi bolezni. Zdravljenje z obsevanjem, monokemoterapijo in kortikosteroidi je izboljšalo bolnikove simptome, redko pa je vodilo k ozdravitvi. Z razvojem imunologije in s tem možnosti določanja podtipov NHL, z uvajanjem novih diagnostičnih metod za določanje razširjenosti bolezni in z uvedbo intenzivnega sistemskega zdravljenja s citostatiki ob sočasnem podpornem zdravljenju so se možnosti ozdravitve povečale tudi pri razširjeni bolezni.

Več kot 80% bolnikov je v opazovanem obdobju prišlo na prvo ali dodatno zdravljenje na Onkološki inštitut, sorazmerno več bolnikov z ektranodalno kot z nodalno obliko bolezni. Do leta 1979 smo uporabljali histološko razvrstitev po Rappaportu, nato kratko obdobje Lukes-Collinsovo razvrstitev in po letu 1980 kielsko. Glede na razširjenost bolezni smo do leta 1970 bolnike razvrščali v stadije po Kaplanu, od takrat dalje po Ann-Arborju. Do leta 1972 smo bolnike večinoma zdravili z obsevanjem. Po letu 1968 je vse več bolnikov z razširjeno boleznijo prejelo tudi citostatike (monokemoterapija z endoksanom ali klorambuciom) in kortikosteroide. Po letu 1972 smo do leta 1983 bolnike zdravili z obsevanjem le še v stadiju I in II in s histološko ugodno vrsto, v stadijih III in IV in z neugodno histološko vrsto s kombinacijo več citostatikov, z obsevanjem pa le na "področja" bezgavk z več bolezni. Po letu 1983 smo zdravljenje prilagodili prognostičnim kazalcem: histološki podvrsti, razširjenosti bolezni, starosti, telesni zmogljivosti, prisotnosti ektranodalnih lokacij in izbranim tumorskim kazalcem. Omejene nizko maligne limfome smo takrat in jih še danes zdravimo z obsevanjem, razširjene nizko maligne pa le ob simptomih (monokemoterapija s klorambuciom in kortikosteroidi). Zdravljenje limfomov srednje in visoke stopnje malignosti poteka po intenzivnih citostatičnih shemah (CHOP, MACOP-B, BFM). Nizko dozo obsevanja dodamo le na mesto bolezni.

V obravnavanem 28-letnem obdobju se je preživetje postopoma izboljševalo kot posledica natančnejše diagnostike in usmerjenega načina zdravljenja z novimi citostatiki.

More than 30 years back, the disease was fatal for the majority of NHL patients. Treatment with irradiation, monochemotherapy and corticosteroids did indeed alleviate the patients' symptoms, but it rarely resulted in cure. The chances for cure - even in patients with advanced disease - were greatly enhanced by progress in immunology and the associated possibility of NHL subtype determination, as well as by new diagnostic methods for staging of the disease, and the use of intensive systemic chemotherapy combined with a supportive therapy.

More than 80% of patients were referred to the Institute of Oncology for primary or adjuvant therapy during the observed period; among them those with nodal disease prevailed. Up to 1979, we had been using histological classification according to Rappaport, and after that, for a brief period of time, Lukes-Collins' classification; the Kiel classification has been used since 1980 onwards. With regard to the extent of disease, the patients were distributed by stages: up till 1970 according to Kaplan, and after that according to Ann-Arbor. Until 1972 the patients had been treated mostly by irradiation. After 1968 more and more patients with advanced disease were receiving cytostatics (monochemotherapy with endoxan or chlorambucyl) and corticosteroids. In the period from 1972 to 1983, irradiation treatment was used only for stages I and II, and histologically favourable types of the disease; patients with stages III and IV, and an unfavourable type of NHL were treated by combined chemotherapy, and irradiation to the affected lymph nodes. After 1983, the treatment was adjusted with regard to the prognostic factors such as histological subtype, extent of the disease, age, performance status, presence of extranodal sites, and selected tumor markers. Localized lymphomas of low-grade malignancy have always been treated by irradiation while disseminated disease of the same type was treated only in the presence of symptoms (monochemotherapy with chlorambucyl and corticosteroids). Lymphomas of medium- and high-grade malignancy are treated by means of intensive chemotherapy using different

Statistično značilen dvig odstotka preživetja v obdobju 1973-77 si lahko razložimo predvsem z uvedbo sistemske kemoterapije v rutinsko uporabo (76,77,78).

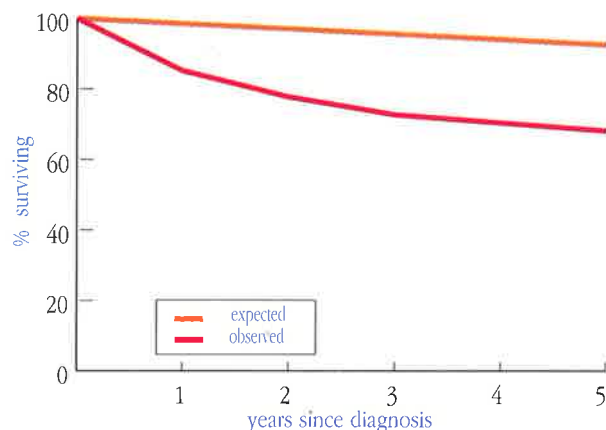
schedules (CHOP, MACOP-B, BFM), and low dose irradiation to the affected site.

In the studied 28-year period, the survival gradually improved as a result of more accurate diagnosis and directed chemotherapy with new cytotoxic drugs. The statistically significant increase in the survival rates observed in the period 1973-77 can be associated with the routine use of systemic chemotherapy (76,77,78).

# HODGKINOVA BOLEZEN

## HODGKIN'S DISEASE

MKB 8 / ICD 8: 201



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z Hodgkinovo boleznijo, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five-year survival of Hodgkin's disease patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za Hodgkinovo boleznijo 609 moških in 412 žensk. Pri 34 bolnikih (3%) je bila bolezen ugotovljena ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca Hodgkinove bolezni rahlo upadala pri obeh spolih (30,79). V letih 1963-67 je bila povprečna letna groba incidenčna mera 2,9/100.000 moških in 1,7/100.000 žensk, v letih 1988-90 pa 2,4/100.000 moških in 1,5/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 83% v letih 1963-67 na 100% v letih 1988-90.

Starostna porazdelitev v analizo preživetja zajetih bolnikov se je po obdobjih spreminjala (tabela 1). Po letu 1973 se je povečal odstotek otrok. Tudi razširjenost bolezni ob diagnozi je bila po obdobjih različna. Pri moških je bil v 80. letih večji odstotek bolnikov ugotovljen v drugem, manjši pa v tretjem in četrtem stadiju bolezni (tabela 2).

**TABELA 1:** Hodgkinova bolezen. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

**TABLE 1:** Hodgkin's disease. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b>							
1963-67	108	9.3	50.9	10.2	18.5	8.3	2.8
1968-72	110	3.6	52.7	10.0	20.0	12.7	0.9
1973-77	95	11.6	48.4	9.5	11.6	13.7	5.3
1978-82	102	13.7	49.0	13.7	7.8	13.7	2.0
1983-87	105	12.4	50.5	12.4	13.3	6.7	4.8
1988-90	68	17.6	50.0	8.8	14.7	7.4	1.5
1963-90	588	10.9	50.3	10.9	14.5	10.5	2.9
<b>Females</b>							
1963-67	70	4.3	44.3	11.4	14.3	22.9	2.9
1968-72	74	4.1	51.4	4.1	14.9	23.0	2.7
1973-77	69	7.2	52.2	7.2	10.1	17.4	5.8
1978-82	71	5.6	66.2	8.5	5.6	8.5	5.6
1983-87	71	11.3	45.1	7.0	7.0	16.9	12.7
1988-90	44	4.5	65.9	2.3	11.4	11.4	4.5
1963-90	399	6.3	53.4	7.0	10.5	17.0	5.8

In the period 1963-90 a total of 609 male and 412 female patients with Hodgkin's disease were diagnosed in Slovenia. In 34 patients (3%) the disease was diagnosed at death and they are not included in the analysis.

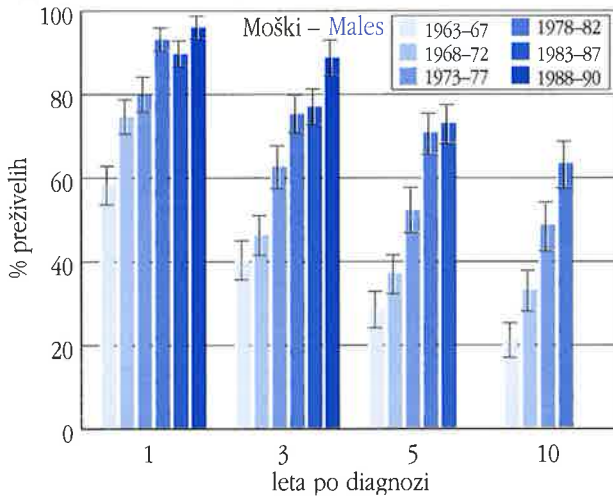
In the observed 28-year time-period the incidence of Hodgkin's disease decreased slightly in both sexes (30,79). In 1963-67 the crude rate was 2.9/100,000 males and 1.7/100,000 females; in 1988-90 it was 2.4/100,000 males and 1.5/100,000 females. The percentage of microscopically confirmed cases increased from 83% in 1963-67 to 100% in 1988-90. The age distribution changed (Table 1). After the year 1973 the percentage of children increased. The extent of disease at diagnosis changed in males. More patients were diagnosed in stage II in the 80's than before and fewer in stages III and IV (Table 2).

**TABELA 2:** Hodgkinova bolezen. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

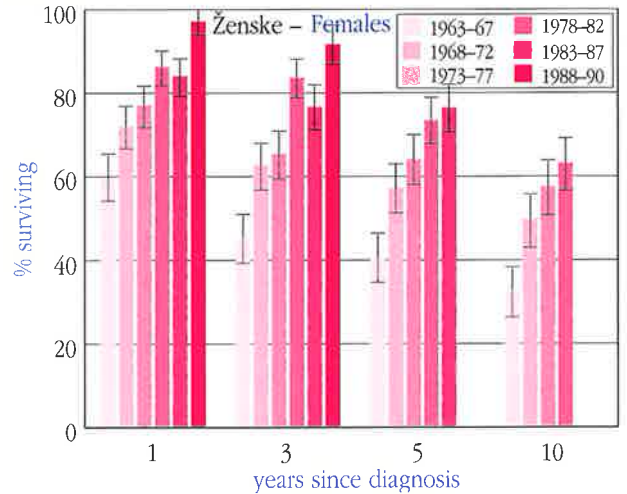
**TABLE 2:** Hodgkin's disease. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease - Ann-Arbor (%)			
		I	II	III + IV	Unknown
<b>Males</b>					
1963-67	108	-	-	-	-
1968-72	110	20.0	21.8	53.6	4.5
1973-77	95	13.7	17.9	66.3	2.1
1978-82	102	17.6	27.5	52.9	2.0
1983-87	105	11.4	36.2	52.4	0.0
1988-90	68	14.7	45.6	39.7	0.0
1963-90	588	15.6	28.8	53.8	1.9
<b>Females</b>					
1963-67	70	-	-	-	-
1968-72	74	25.7	32.4	39.2	2.7
1973-77	69	17.4	26.1	52.2	4.3
1978-82	71	18.3	43.7	33.8	4.2
1983-87	71	12.7	43.7	42.3	1.4
1988-90	44	18.2	36.4	45.5	0.0
1963-90	399	18.5	36.5	42.2	2.7

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z Hodgkinovo bolezenijo zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



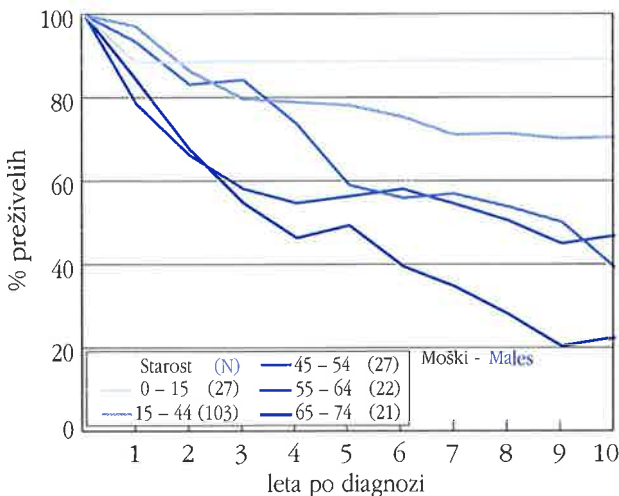
**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with Hodgkin's disease diagnosed in the period 1963 – 90 by sex and period of observation.



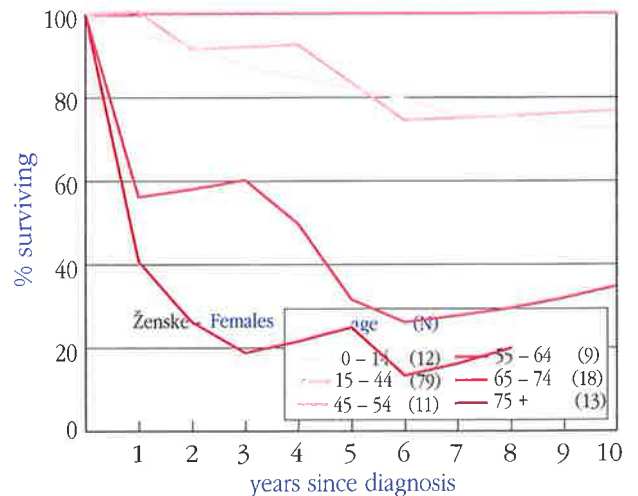
**TABELA 3:** Hodgkinova bolezen. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Hodgkin's disease. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	57.01	38.32	26.17	17.76	58.57	42.86	37.14	26.84	57.74	39.91	28.13	20.95	59.35	44.70	40.01	31.86
1968-72	72.73	43.64	33.64	27.13	70.27	59.46	52.70	41.77	73.82	45.77	36.58	32.68	71.14	61.87	56.51	49.01
1973-77	77.66	58.51	46.81	39.36	75.36	62.32	59.42	49.28	79.13	61.96	51.58	48.08	76.21	64.59	63.27	56.78
1978-82	91.00	71.60	65.38	53.92	84.51	80.28	68.95	56.02	92.13	74.46	70.00	62.66	85.30	82.67	72.55	62.40
1983-87	87.62	73.22	67.44		81.69	71.83	69.01		88.74	76.18	72.20		83.13	75.75	75.58	
1988-90	94.07	85.12			95.46	88.64			95.00	87.78			96.09	90.57		

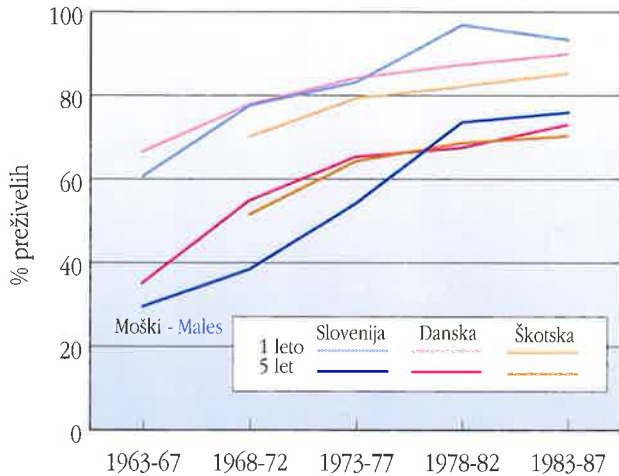
**SLIKA 3:** Relativno desetletno preživetje bolnikov z Hodgkinovo bolezenijo zbolelih v letih 1978 – 87 po spolu in starosti.



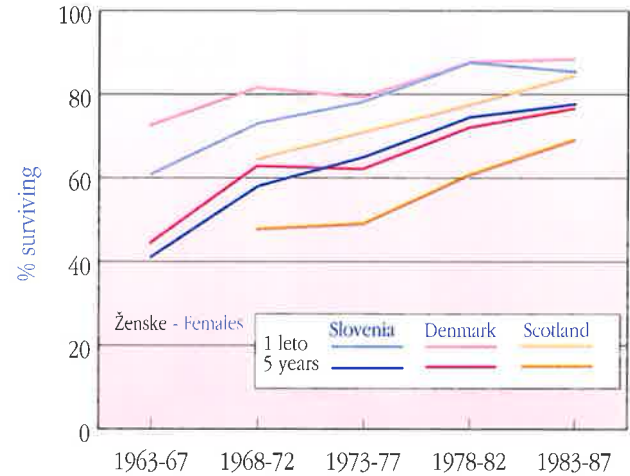
**FIGURE 3:** Relative ten-year survival of Hodgkin's disease patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov s Hodgkinovo boleznijo, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of Hodgkin's disease patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



Pomembni mejniki v diagnostiki Hodgkinove bolezni so bili: uvedba scintigrafije jeter in vranice leta 1964, limfografije in radioaktivne limfografije v letih 1965-66, scintigrafije telesa z galijem ( $^{67}\text{Ga}$ ) in "staging laparotomije" v letu 1973. Kasneje sta bili uvedeni še računalniška tomografija prsnega koša in trebuha (1981) ter ultrazvočna preiskava trebuha (1984).

Pomembne spremembe v načinu zdravljenja so bile uvedene po letu 1968. Do tedaj so bolnike obserali samo lokalno in do leta 1970 je bila v uporabi le monokemoterapija (vinblastin od leta 1964 dalje). Leta 1969 so uvedli radikalno obsevanje (tehnika plaščnega polja in obrnjene Y), ki je potekalo do leta 1974 na kobaltovem aparatu ( $^{60}\text{Co}$ ), po tem pa na linearnem pospeševalniku. Leta 1971 so uvedli polikemoterapijo (najprej shema MOPP, kasneje tej podobne sheme). Leta 1980 je bila uvedena še nova kombinacija citostatikov (shema ABVD) in leta 1987 shema MOPP/ABVD.

V sredini 70. let so bila oblikovana natančna merila za uporabo obsevanja, kemoterapije in kombinacije kemoterapije z obsevanjem glede na razširjenost bolezni.

Povečanje odstotka eno-, pet- in desetletnega relativnega preživetja pri obeh spolih v letih 1978-82 si lahko razlagamo z uvedbo novih diagnostičnih metod in s tem natančnejše zamejitve bolezni, takrat že oblikovanih meril za uporabo obsevanja, kemoterapije in njune kombinacije glede na stadij, histološki tip, in B-simptome ter z opisanimi spremembami v zdravljenju (79,80).

Important milestones in the diagnosis of Hodgkin's disease were as follows: the introduction of scintiscan of the liver and spleen in 1964, lymphography and radionuclide lymphography in 1965-66, Gallium scintigraphy ( $^{67}\text{Ga}$ ) and staging laparotomy in 1973. Computed tomography of the thorax and abdomen was introduced somewhat later (in 1981), and ultrasonography of the abdomen in 1984.

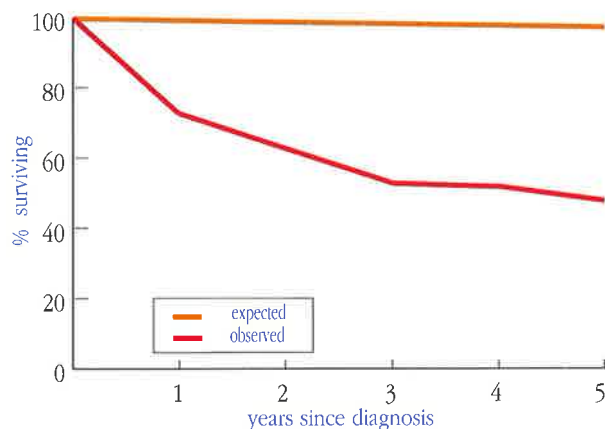
Important changes in the treatment approach occurred after 1968. Until then the patients had been receiving only local irradiation, and till 1970 only monochemotherapy (vinblastine has been used from 1964 on). Radical irradiation using the mantle-field and turned Y technique was introduced in 1969; till 1974 it was performed on a Cobalt unit ( $^{60}\text{Co}$ ), and after that on a linear accelerator. Polychemotherapy came into use in 1971; the first - MOPP - schedule was followed by other similar combinations. Later on, two new combinations of cytotoxic drugs were introduced: ABVD schedule in 1980, and MOPP/ABVD in 1987.

In the mid-70's clear indications were defined for the use of irradiation, chemotherapy and a combination of chemotherapy with irradiation according to the extent of disease. The increase in one-, five- and ten-year relative survival rates of both sexes in the period 1978-1982 can be attributed to the new diagnostic methods and the associated possibility of more accurate staging, as well as to the clearly defined indications for the use of irradiation, chemotherapy and a combination of both modalities according to stage, histological type and B-symptoms, and to the described changes in treatment approach (79, 80).

# AKUTNA LIMFOBLASTNA LEVKEMIJA

## ACUTE LYMPHOBLASTIC LEUKEMIA

MKB 8 / ICD 8: 2040



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z akutno limfoblastno levkemijo, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of acute lymphoblastic leukemia patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za akutno limfoblastno levkemijo 209 moških in 200 žensk. Pri petih bolnikih (1,5%) je bila levkemija ugotovljena ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca akutne limfoblastne levkemije rahlo naraščala pri obeh spolih (30). V letih 1963-67 je bila groba incidenčna mera 0,6/100.000 moških in 0,6/100.000 žensk; v letih 1988-90 pa 1,2/100.000 moških in 1,4/100.000 žensk. Delež otrok, starih do vključno 14 let, se je med bolniki, zajetimi v analizo, v opazovanem 28-letnem obdobju gibal od 38% do 71% pri moških in od 48% do 74% pri ženskah (tabela 1).

Pri otrocih in odraslih se je odstotek enoletnega preživetja statistično značilno povečeval do vključno obdobja 1973-77. Odstotek petletnega preživetja se je pri moških statistično

In the period 1963-90 a total of 209 male and 200 female patients with acute lymphoblastic leukemia were diagnosed in Slovenia. In five patients (1.5%) leukemia was diagnosed at death and they are not included in the analysis.

In the observed 28-year time-period the incidence of acute leukemia slightly increased in both sexes (30). In 1963-67 the crude rate was 0.6/100,000 males and 0.6 /100,000 females; in 1988-90 it was 1.2/100,000 males and 1.4/100,000 females. The age distribution did not change (Table 1). The percentage of children, aged 0-14 years varied from 38%-71% in males, and 48%-74% in females.

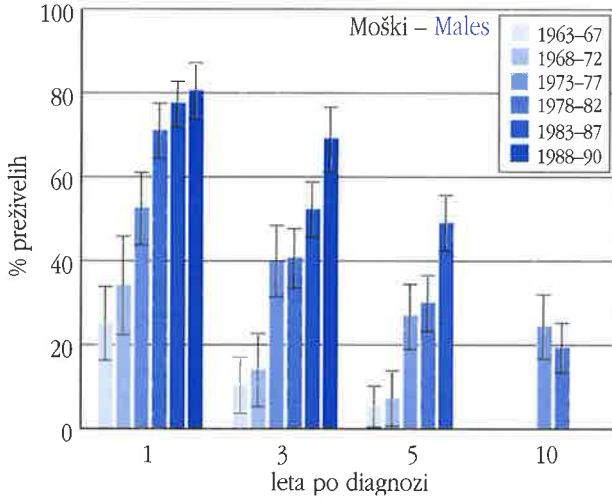
A significant increase in relative one-year survival in both sexes was observed till 1973-77 (Figure 2, Table 3). The five-year survival rate in males increased significantly after the year 1972, and again after 1982. In females a significant

TABELA 1: Akutna limfoblastna levkemija. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

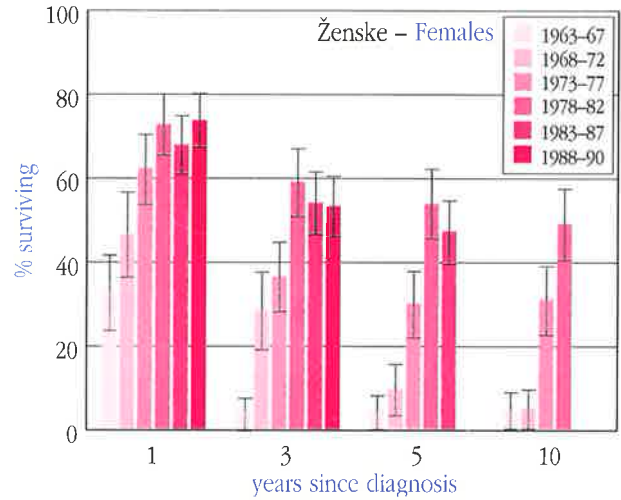
TABLE 1: Acute Lymphoblastic Leukemia. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
Males	1963-67	24	37.5	25.0	4.2	25.0	4.2	4.2
	1968-72	15	46.7	26.7	0.0	6.7	20.0	0.0
	1973-77	31	71.0	16.1	0.0	6.5	6.5	0.0
	1978-82	46	54.3	23.9	6.5	6.5	4.3	4.3
	1983-87	55	65.5	23.6	3.6	1.8	1.8	3.6
	1988-90	34	50.0	35.3	8.8	2.9	2.9	0.0
	1963-90	205	56.6	24.9	4.4	6.8	4.9	2.4
Females	1963-67	25	56.0	8.0	8.0	4.0	12.0	12.0
	1968-72	22	59.1	18.2	4.5	4.5	4.5	9.1
	1973-77	31	74.2	12.9	0.0	3.2	6.5	3.2
	1978-82	35	68.6	8.6	11.4	2.9	5.7	2.9
	1983-87	42	47.6	33.3	4.8	9.5	0.0	4.8
	1988-90	44	50.0	36.4	2.3	4.5	4.5	2.3
	1963-90	199	58.3	21.6	5.0	5.0	5.0	5.0

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z akutno limfoblastno levkemijo zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with acute lymphoblastic leukemia diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Akutna limfoblastna levkemija. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Acute Lymphoblastic Leukemia. Observed and relative survival by sex and period of observation.

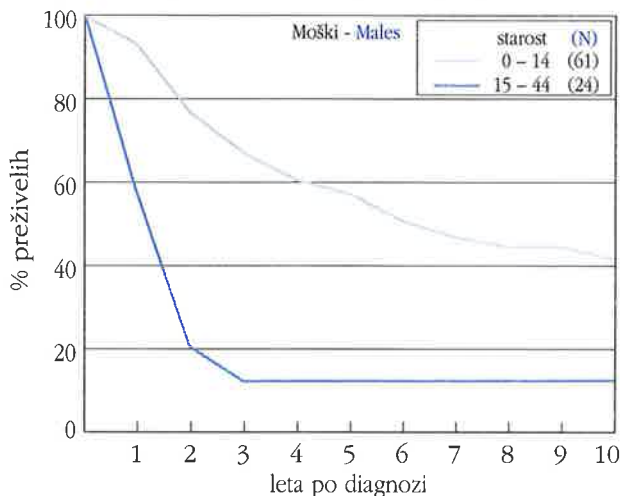
Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	24.44	9.78	4.89	0.00	32.00	4.00	4.00	4.00	24.87	10.31	5.33	0.00	32.55	4.20	4.35	4.71
1968-72	33.33	13.33	6.67	0.00	45.46	27.27	9.09	4.55	33.78	13.91	7.17	0.00	45.98	28.11	9.56	5.03
1973-77	51.61	38.71	25.81	22.58	61.29	35.48	29.03	29.03	52.02	39.52	26.70	24.14	61.64	36.05	29.83	30.74
1978-82	69.57	39.13	28.26	17.39	71.43	57.14	51.43	45.71	70.26	40.29	29.69	19.20	71.98	58.41	53.23	48.63
1983-87	76.36	50.91	47.27		66.67	52.38	45.24		76.76	51.71	48.52		67.17	53.50	46.82	
1988-90	79.41	67.65			72.73	52.27			79.71	68.43			72.94	52.72		

značilno povečal po letu 1972 in nato ponovno po letu 1982, pri ženskah pa po obdobju 1973-77 (slika 2, tabela 3). Povečanje odstotka petletnega preživetja bolnikov z akutno limfoblastno levkemijo gre v glavni meri na račun otrok (slika 3). Pri njih je bil odstotek petletnega preživetja v letih 1978-87 57% (dečki), oz. 68% (deklince) in se je, kot kažejo podrobni podatki, vse obdobje večal.

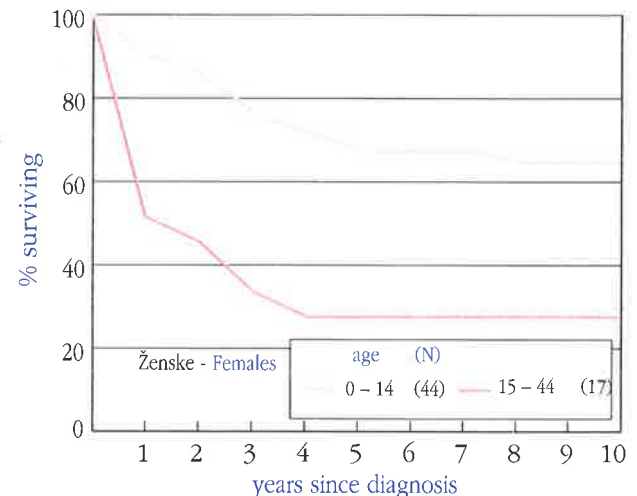
increase was noticed after 1977. In relation to age at diagnosis in the period 1978-87 (Figure 3), the five-year survival was the best in children aged 0-14 years. Boys survived 5 years in 57%, and girls in 68% of cases.

The better survival of children in the period 1963-90 was attributable to the changes in treatment approach. At the

**SLIKA 3:** Relativno desetletno preživetje bolnikov z akutno limfoblastno levkemijo zbolelih v letih 1978 – 87 po spolu in starosti.

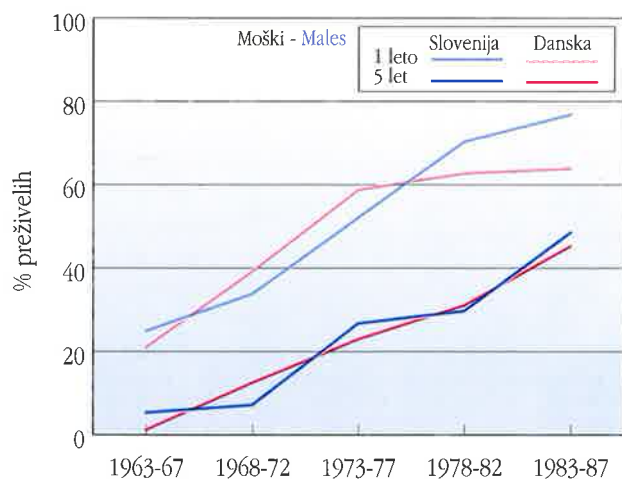


**FIGURE 3:** Relative ten-year survival of acute lymphoblastic leukemia patients diagnosed in the period 1978 – 87 by sex and age.

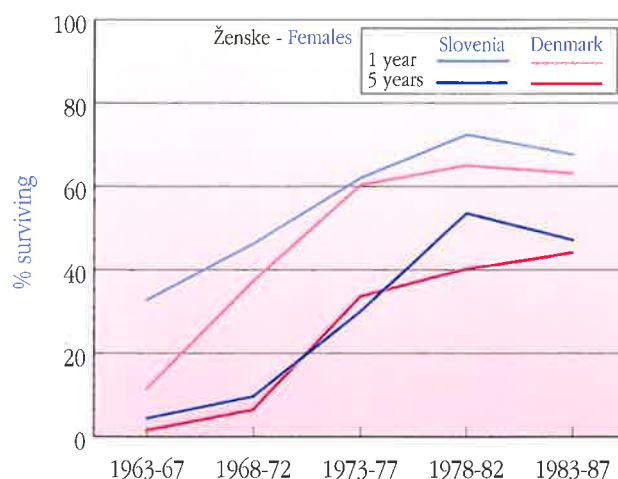




**Slika 4:** Eno- in petletno relativno preživetje bolnikov z akutno limfoblastno levkemijo v Sloveniji in na Danskem v letih 1963-87 po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of acute lymphoblastic leukemia patients, diagnosed in 1963-87 in Slovenia and Denmark, by sex and period of observation.



K izboljšanju preživetja otrok so v obdobju 1963-90 prispevale spremembe v načinu zdravljenja. V začetku 70. let je bilo v zdravljenje vključeno preventivno obsevanje centralnega živčnega sistema, sredi 70. let so uvedli četrto zdravilo L-asparaginazo v kombinaciji z vinkristinom, antraciklinom in prednisonom ter podaljšali čas intenzivnega zdravljenja s fazo konsolidacije. V začetku 80. let so uvedli intenzivnejše zdravljenje z novimi citostatiki v fazi konsolidacije. Zdravili so bolj individualno glede na "rizičnost" bolezni. Sredi 80. let so v zgodnje zdravljenje vključili še visoke odmerke metotreksata.

Pri odraslih se je odstotek preživetja povečal v manjši meri. K temu povečanju je pripomoglo intenzivnejše zdravljenje v obdobju indukcije in konsolidacije z daunorubicinom, L-asparaginazo in velikimi odmerki citozin arabinosida ter boljše podporno zdravljenje (81).

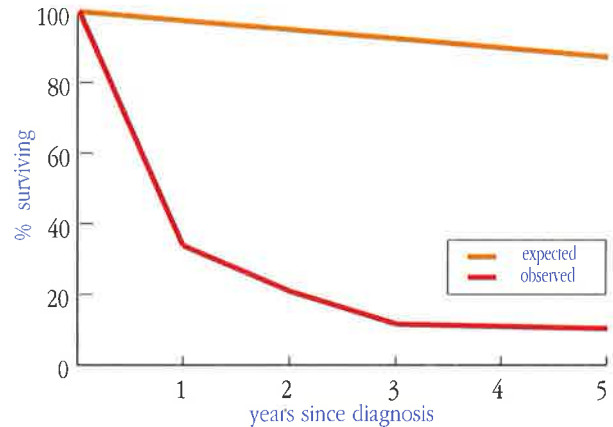
beginning of the 70's, the therapy included preventive irradiation of the central nervous system, in the mid-70's the fourth medication, i.e. L-asparaginase, came into use in combination with vincristine, anthracycline and prednisone; the duration of intensive therapy was prolonged for the phase of consolidation in the remission. At the beginning of the 80's, a more intensive treatment was introduced, with new cytotoxic drugs applied in the phase of consolidation. The treatment was planned individually, according to the degree of risk entailed by the disease. In the mid-80's early treatment was implemented by high doses of methotrexate.

In adults the increase in survival rates was less pronounced; it was influenced by more intensive therapy in the periods of induction and consolidation, using daunorubicin, L-asparaginase and high doses of cytosin-arabinoside, and by better supportive treatment (81).

# AKUTNE NELIMFOBLASTNE LEVKEMIJE

## ACUTE NON-LYMPHATIC LEUKEMIAS

MKB 8 / ICD 8: 2050, 2060, 2070



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z akutno nelimfoblastno levkemijo, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of acute non-lymphatic leukemias patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za akutno nelimfoblastno levkemijo 411 moških in 421 žensk. Pri 32 bolnikih (4%) je bila levkemija ugotovljena ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca akutne nelimfoblastne levkemije zmerno naraščala pri obeh spolih. V letih 1963-67 je bila groba incidenčna mera 1,4/100.000 moških in 1,3/100.000 žensk; v letih 1988-90 pa 2,6/100.000 moških in 1,9/100.000 žensk. Delež otrok, starih do vključno 14 let, se je v opazovanem 28-letnem obdobju gibal od 7% do 36% pri moških in od 7% do 27% pri ženskah (tabela 1). Največ bolnikov je bilo starih 15-44 let.

In the period 1963-90 a total of 411 male and 421 female patients with acute non-lymphatic leukemia were diagnosed in Slovenia. In 32 patients (4%) leukemia was diagnosed at death and they are not included in the analysis.

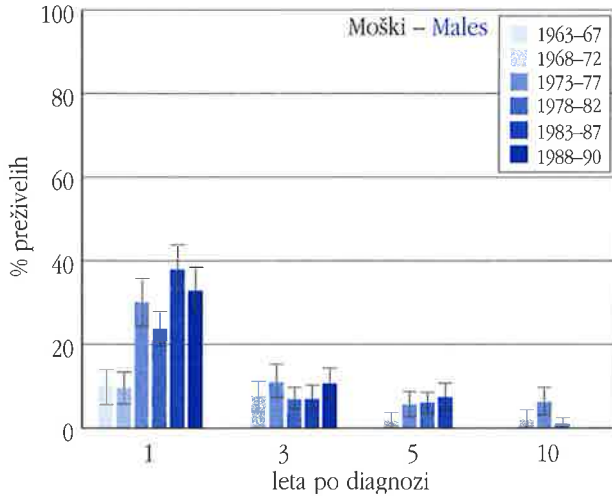
In the observed 28-year time-period the incidence of non-lymphatic acute leukemia increased moderately in both sexes. In 1963-67 the crude rate was 1.4/100,000 males and 1.3/100,000 females; in 1988-90 it was 2.6/100,000 males and 1.9/100,000 females. The age distribution changed (Table 1); the percentage in the eldest age group increased. The percentage of children aged 0-14 years varied from 7-36% in males and from 7-27% in females. Most patients were aged 15-44 years.

**TABELA 1:** Akutne nelimfoblastne levkemije. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

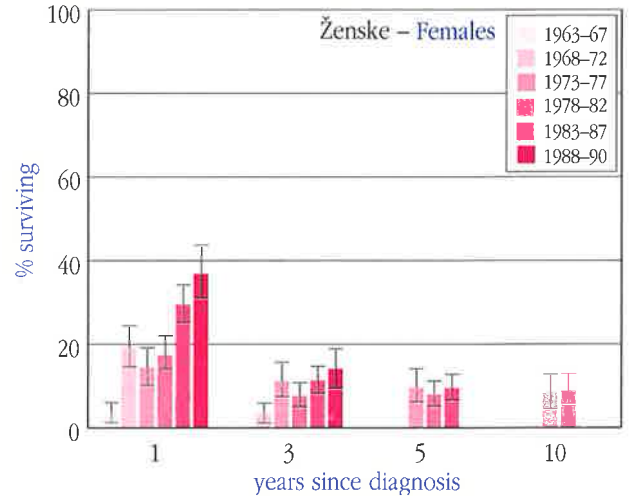
**TABLE 1:** Acute Non-lymphatic Leukemias. Patients included in the analysis by sex, age and period of observation.

Sex	Period of observation	No.	Age at diagnosis (%)					
			-14	15-44	45-54	55-64	65-74	75+
Males	1963-67	50	36.0	32.0	4.0	16.0	10.0	2.0
	1968-72	54	29.6	24.1	5.6	16.7	24.1	0.0
	1973-77	59	23.7	42.4	5.1	5.1	16.9	6.8
	1978-82	99	15.2	26.3	11.1	9.1	28.3	10.1
	1983-87	63	15.9	17.5	14.3	17.5	22.2	12.7
	1988-90	73	6.8	17.8	15.1	32.9	12.3	15.1
	1963-90	398	19.6	26.1	9.8	16.1	19.8	8.5
Females	1963-67	56	16.1	37.5	8.9	23.2	12.5	1.8
	1968-72	59	27.1	25.4	10.2	13.6	15.3	8.5
	1973-77	56	7.1	21.4	21.4	14.3	30.4	5.4
	1978-82	82	11.0	23.2	11.0	17.1	28.0	9.8
	1983-87	94	5.3	24.5	10.6	21.3	18.1	20.2
	1988-90	55	7.3	25.5	12.7	12.7	14.5	27.3
	1963-90	402	11.7	25.9	12.2	17.4	20.1	12.7

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z akutno nelimfoblastno levkemijo zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with acute non-lymphatic leukemias diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Akutne nelimfoblastne levkemije. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Acute Nonlymphatic Leukemias. Observed and relative survival by sex and period of observation.

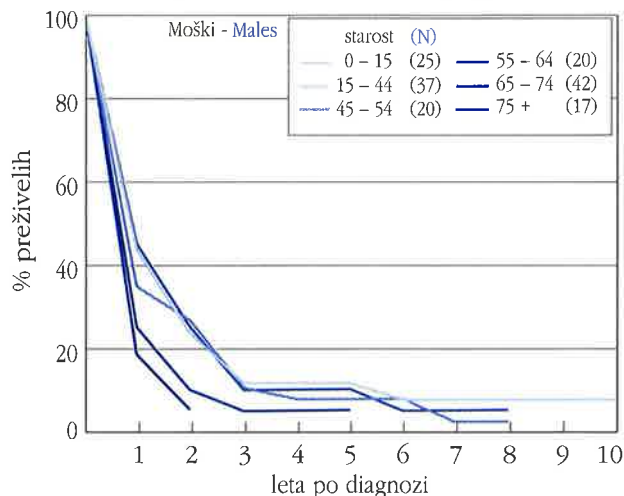
Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	10.00	0.00	0.00	0.00	3.64	0.00	0.00	0.00	10.15	0.00	0.00	0.00	3.67	0.00	0.00	0.00
1968-72	9.26	7.41	1.85	1.85	18.97	3.45	0.00	0.00	9.46	7.91	2.07	2.36	19.24	3.61	0.00	0.00
1973-77	29.31	10.35	5.17	5.17	14.29	10.71	8.93	7.14	29.87	10.95	5.69	6.26	14.52	11.29	9.79	8.82
1978-82	23.08	6.29	5.25	1.05	17.07	7.32	7.32	7.32	23.81	6.90	6.11	1.42	17.43	7.81	8.19	9.35
1983-87	36.51	6.35	6.35		28.72	10.64	8.51		37.63	6.97	7.44		29.43	11.47	9.71	
1988-90	31.51	9.59			35.85	13.21			32.62	10.65			36.75	14.28		

Statistično značilno se je odstotek enoletnega preživetja pri moških povečal po letu 1973, pri ženskah pa že po letu 1968 in kasneje ponovno po letu 1983. Odstotki tri- in petletnega preživetja se niso veliko spreminjali (slika 2, tabela 3). Pri moških in ženskah je bil odstotek enoletnega preživetja večji pri otrocih in mladih odraslih (slika 3). Pri ženskah je bil pri otrocih in mladih odraslih večji tudi odstotek tri- in petletnega preživetja.

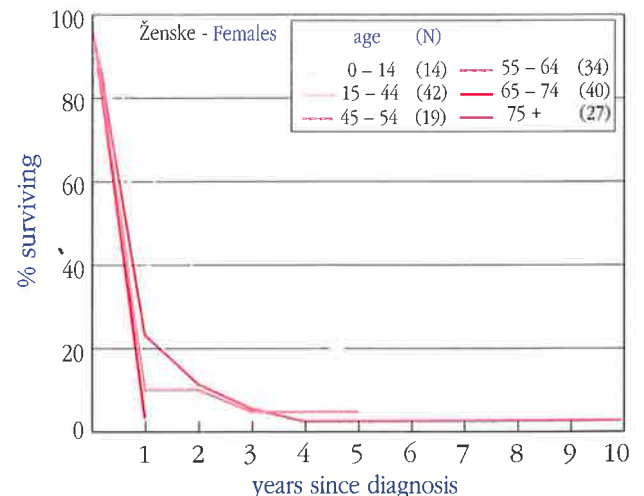
A significant increase in the relative one-year survival rate in males increased after 1973, in females after 1968, and again after 1983 (Figure 2, Table 3). The three- and five-year survival rates remained almost the same.

In relation to age at diagnosis, the one year survival rate was better in children and young adults of both sexes (Figure 3). The three- and five- year survival was better in girls and young women only.

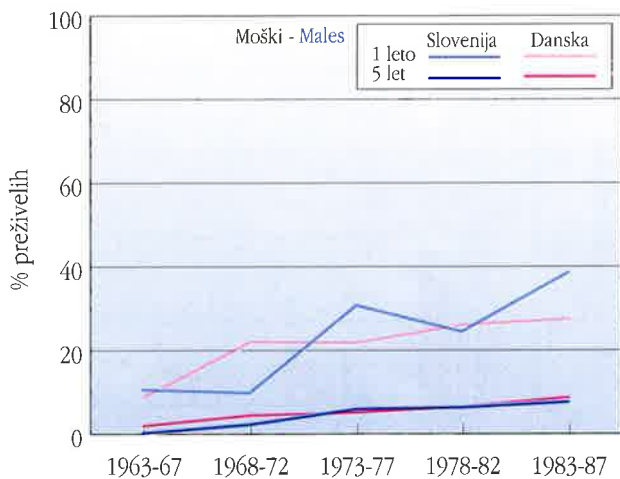
**SLIKA 3:** Relativno desetletno preživetje bolnikov z akutno nelimfoblastno levkemijo zbolelih v letih 1978 – 87 po spolu in starosti.



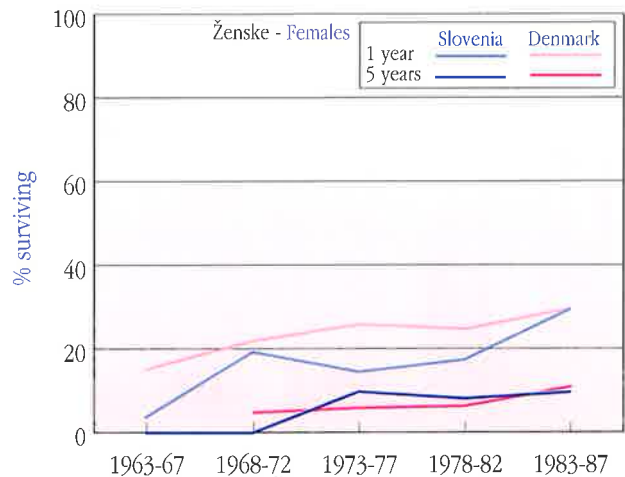
**FIGURE 3:** Relative ten-year survival of acute non-lymphatic leukemias patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z akutno nelimfoblastno levkemijo, zbolelih v letih 1963-87 v Sloveniji in na Danskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of acute non-lymphoblastic leukemia patients, diagnosed in 1963-87 in Slovenia and Denmark, by sex and period of observation.



V Sloveniji so v začetku 80. let v zdravljenje teh vrst akutnih levkemij uvedli citostatika citozin arabinozid in daunorubicin in sočasno izboljšali podporno zdravljenje.

Da bi zvečali odstotek petletnega preživetja, so ob koncu 80. let v zdravljenje uvedli nove citostatike (mitoksantron, amsakrin).

Presaditev kostnega mozga izvajajo v Sloveniji od leta 1989. V opazovanem obdobju ni bilo nobene presaditve kostnega mozga pri otrocih v prvi remisiji bolezni. Intenzivnejše citostatsko zdravljenje v prvi fazi bolezni je nekaterim podaljšalo preživetje, nekaterim pa ga je zaradi komplikacij skrajšalo. Pri odraslih je bilo število presaditev kostnega mozga majhno in ni pomembno vplivalo na prikazane rezultate.

At the beginning of the 80's, the treatment of this type of leukemia in Slovenia was implemented by the use of cytosin arabinoside and daunorubicin, with simultaneous improvement of supportive therapy.

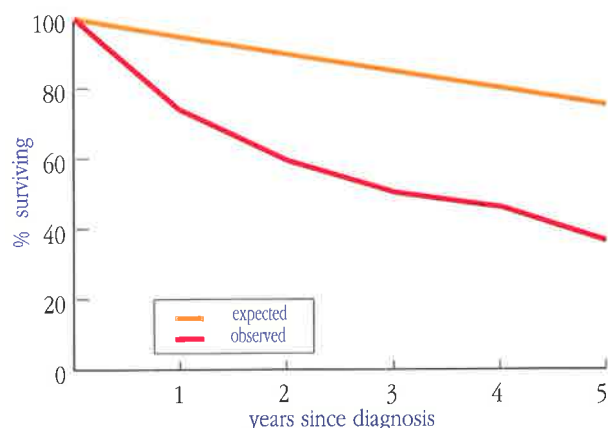
In order to increase the five-year survival rates, by the end of the 80's new cytotoxic agents (mitoxantrone and amsakrin) were introduced.

In Slovenia, bone marrow transplantation has been practised since 1989. During the observed period, there was no bone marrow transplantation performed in children in the first disease-free interval. In some patients intensive chemotherapy during the first phase of the disease resulted in prolonged survival, while in others its effect on survival was adverse due to treatment-related complications. In adults, the number of bone marrow transplantations was low and did not significantly influence the results presented.

# KRONIČNA LIMFOCITNA LEVKEMIJA

## CHRONIC LYMPHATIC LEUKEMIA

MKB 8 / ICD 8: 2041



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z kronično limfocitno levkemijo, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of chronic lymphatic leukemia patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za kronično limfocitno levkemijo 695 moških in 540 žensk. Pri 45 bolnikih (4%) je bila levkemija ugotovljena ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca kronične limfocitne levkemije zmerno naraščala pri obeh spolih; eden od razlogov tega naraščanja je bilo tudi popolnejše prijavljanje po letu 1985 (30). V letih 1963-67 je bila groba incidenčna mera 2,6/100.000 moških in 1/100.000 žensk; v letih 1988-90 pa 3,5/100.000 moških in 2,9/100.000 žensk. Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1). Odstotek bolnikov v najstarejši starostni skupini se je v zadnjih obdobjih opazovanja povečal.

In the period 1963-90 a total of 695 male and 540 female patients with chronic lymphatic leukemia were diagnosed in Slovenia. In 45 patients (4%) leukemia was diagnosed at death and they are not included in the analysis.

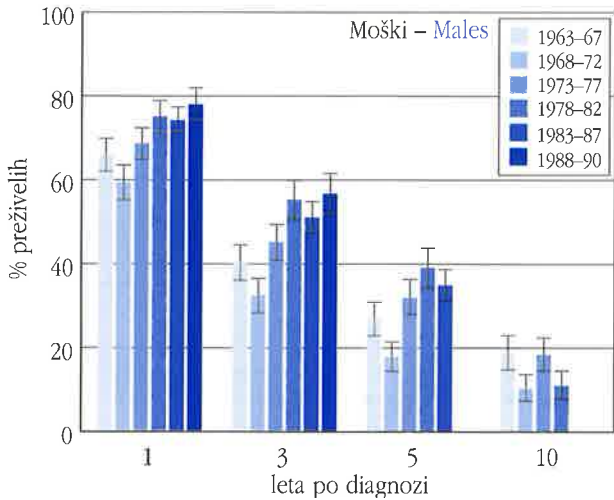
In the observed 28-year time-period the incidence of registered chronic leukemia increased moderately in both sexes (one of the reasons was more complete reporting after the year 1985 incl.) (30). In 1963-67 the crude incidence rate was 2.6/100,000 males and 1/100,000 females; in 1988-90 it was 3.5/100,000 males and 2.9/100,000 females. 100% of cases were microscopically confirmed. The age distribution changed (Table 1). The percentage in the eldest age group increased.

**TABELA 1:** Kronična limfocitna levkemija. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

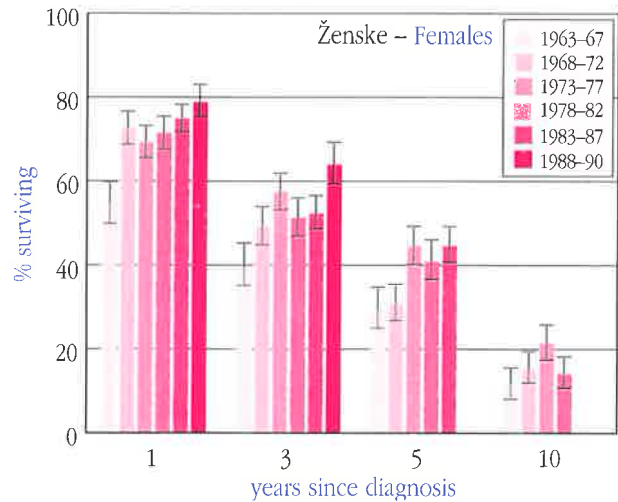
**TABLE 1:** Chronic Lymphatic Leukemia. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
Males	1963-67	102	1.0	3.9	10.8	31.4	43.1	9.8
	1968-72	95	1.1	3.2	8.4	34.7	37.9	14.7
	1973-77	116	1.7	0.9	13.8	26.7	37.1	19.8
	1978-82	98	0.0	3.1	14.3	25.5	31.6	25.5
	1983-87	172	0.0	3.5	16.9	20.3	30.2	29.1
	1988-90	95	0.0	4.2	13.7	26.3	25.3	30.5
1963-90	678	0.6	3.1	13.4	26.7	33.9	22.3	
Females	1963-67	42	0.0	7.1	11.9	31.0	42.9	7.1
	1968-72	79	0.0	11.4	6.3	25.3	36.7	20.3
	1973-77	89	0.0	1.1	5.6	14.6	49.4	29.2
	1978-82	87	0.0	2.3	12.6	17.2	31.0	36.8
	1983-87	130	0.0	2.3	6.2	18.5	30.8	42.3
	1988-90	85	0.0	2.4	5.9	20.0	28.2	43.5
1963-90	512	0.0	3.9	7.6	19.9	35.5	33.0	

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z kronično limfocitno levkemijo zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with chronic lymphatic leukemia diagnosed in the period 1963 – 90 by sex and period of observation.



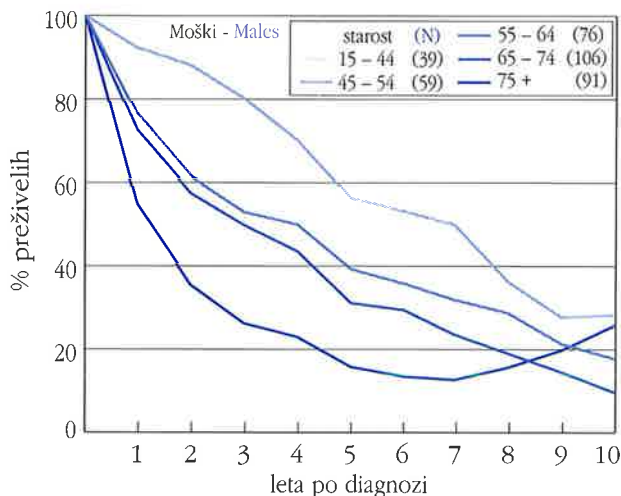
**TABELA 3:** Kronična limfocitna levkemija. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Chronic Lymphatic Leukemia. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	62.67	35.33	21.33	11.33	52.94	36.74	25.93	8.64	65.20	40.09	26.69	18.80	54.17	39.54	29.57	11.77
1968-72	56.34	28.17	14.09	6.34	69.77	44.44	26.19	10.93	58.75	32.13	17.67	10.31	71.96	48.93	30.87	15.54
1973-77	64.74	38.58	24.66	10.75	66.32	51.12	36.62	14.13	67.91	44.67	31.63	18.20	68.70	57.07	44.33	21.56
1978-82	70.82	47.21	30.04	6.44	68.42	45.61	33.45	9.12	74.29	54.71	38.67	10.92	70.86	51.02	40.74	14.35
1983-87	69.63	42.88	26.08		71.12	45.41	35.01		73.42	50.54	34.60		74.23	52.01	44.44	
1988-90	73.44	48.17			75.11	55.89			77.13	56.15			78.23	63.55		

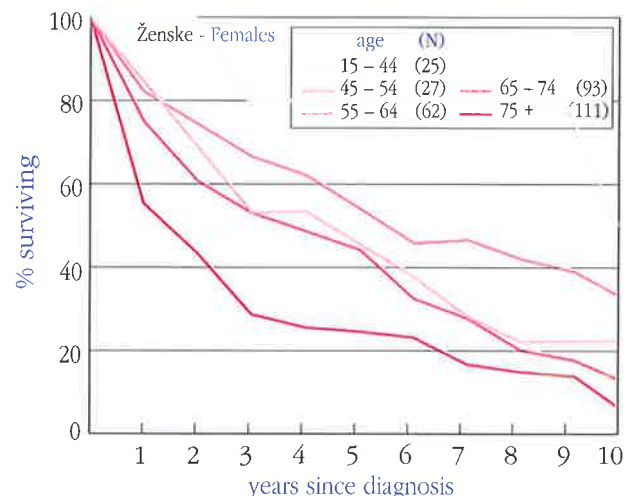
Odstotek petletnega relativnega preživetja se je postopno povečeval pri obeh spolih, največje povečanje je bilo v letih 1973-77 (slika 2, tabela 3). Pri bolnikih obeh spolov so bili odstotki preživetja večji pri mlajših (slika 3).

An increase in the relative five-year survival rate was observed in both sexes (Figure 2, Table 3). The increase was most evident in 1973-77. In relation to age at diagnosis the five year survival was better in younger patients of both sexes (Figure 3).

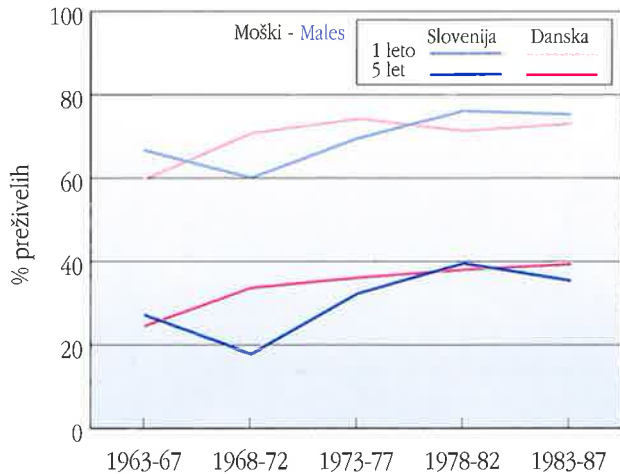
**SLIKA 3:** Relativno desetletno preživetje bolnikov z kronično limfocitno levkemijo zbolelih v letih 1978 – 87 po spolu in starosti.



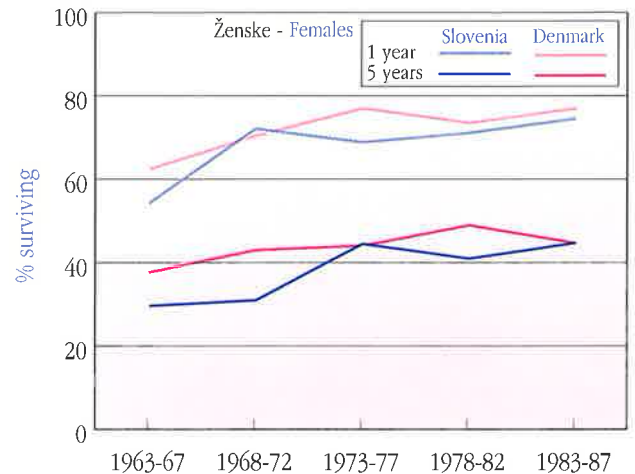
**FIGURE 3:** Relative ten-year survival of chronic lymphatic leukemia patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov s kronično limfocitno levkemijo, zbolelih v letih 1963-87 v Sloveniji in na Danskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of chronic lymphatic leukemia patients, diagnosed in 1963-87 in Slovenia and Denmark, by sex and period of observation.



Za večino bolnikov s kronično limfocitno levkemijo se zdravljenje do začetka 90. let, ko smo jih zdravili z levkeranom, glukokortikoidi, obsevanjem vranice, shemami COP in CHOP, ni spremenilo (82).

Zmerno podaljšanje preživetja je najverjetneje posledica izboljšanja podpornega zdravljenja.

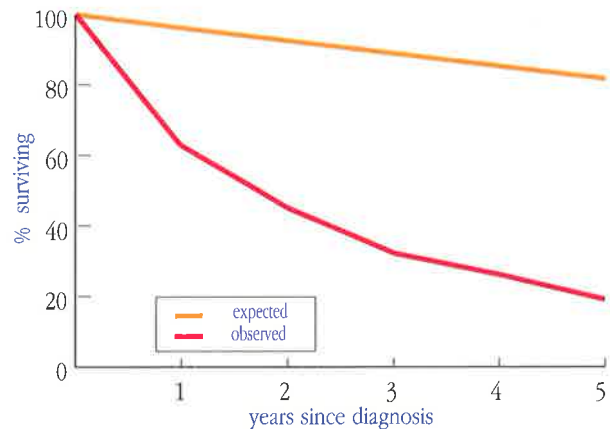
Until the 90's the treatment for chronic lymphatic leukemia had remained essentially unchanged (82); it comprised leukeran, glucocorticoids, irradiation to the spleen, as well as COP and CHOP chemotherapy schedules.

The moderate increase in the survival is probably the result of better supportive therapy.

# KRONIČNA MIELOIČNA LEVKEMIJA

## CHRONIC MYELOID LEUKEMIA

MKB 8 / ICD 8: 2051, 2061



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z kronično mieloično levkemijo, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of chronic myeloid leukemia patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za kronično mieloično levkemijo 292 moških in 308 žensk. Pri 19 bolnikih (6%) je bila levkemija ugotovljena ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca kronične mieloične levkemije pri obeh spolih rahlo upadala. V letih 1963-67 je bila groba incidenčna mera 1,6/100.000 moških in 1,6/100.000 žensk; v letih 1988-90 pa 1,2/100.000 moških in 1,1/100.000 žensk.

Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1). Delež bolnikov v najstarejši starostni skupini se je v zadnjih obdobjih opazovanja večal. Otrok do 14.leta starosti je bilo več pri moških (2,8%) kot pri ženskah (1%).

In the period 1963-90 a total of 292 male and 308 female patients with chronic myeloid leukemia were diagnosed in Slovenia. In 19 patients (6%) leukemia was diagnosed at death and they are not included in the analysis.

In the observed 28-year time-period the incidence of registered chronic myeloid leukemia was almost stable, with a tendency to decrease. In 1963-67 the crude incidence rate was 1.6/100,000 males and 1.6/100,000 females; in 1988-90 it was 1.2/100,000 males and 1.1/100,000 females.

The age distribution changed (Table 1). The percentage of patients in the eldest age- group increased. The percentage of children (0 - 14 years) was higher in males (2.8%) than in females (1%).

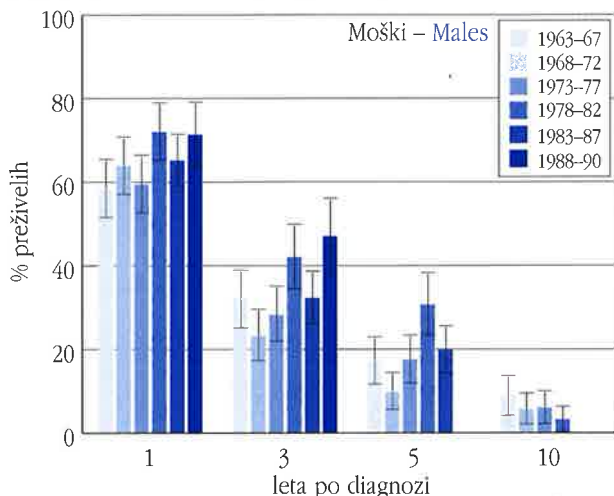
TABELA 1: Kronična mieloična levkemija. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Chronic Myeloid Leukemia. Patients included in the analysis by sex, age and period of observation.

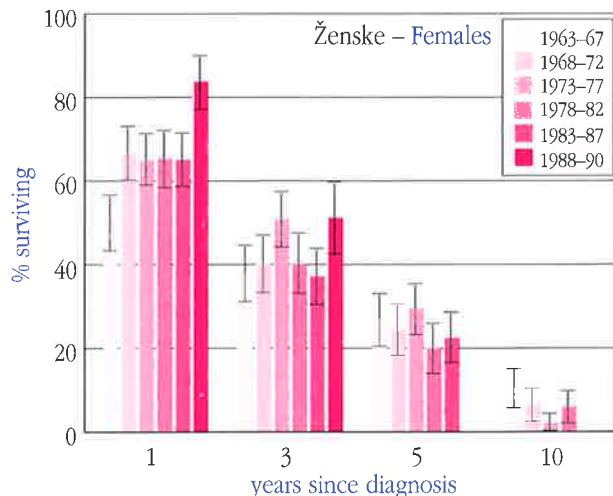
Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
Males	1963-67	48	2.1	33.3	8.3	22.9	22.9	10.4
	1968-72	47	6.4	38.3	12.8	19.1	14.9	8.5
	1973-77	50	2.0	32.0	12.0	22.0	24.0	8.0
	1978-82	43	2.3	37.2	9.3	23.3	18.6	9.3
	1983-87	61	1.6	23.0	19.7	9.8	26.2	19.7
	1988-90	35	2.9	31.4	2.9	22.9	20.0	20.0
	1963-90	284	2.8	32.0	11.6	19.4	21.5	12.7
Females	1963-67	53	0.0	34.0	11.3	20.8	26.4	7.5
	1968-72	51	0.0	33.3	19.6	15.7	21.6	9.8
	1973-77	57	3.5	22.8	21.1	24.6	21.1	7.0
	1978-82	47	0.0	21.3	6.4	14.9	42.6	14.9
	1983-87	56	0.0	17.9	8.9	28.6	12.5	32.1
	1988-90	33	3.0	18.2	30.3	15.2	24.2	9.1
	1963-90	297	1.0	24.9	15.5	20.5	24.2	13.8



**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z kronično mieločno levkemijo zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with chronic myeloid leukemia diagnosed in the period 1963 – 90 by sex and period of observation.



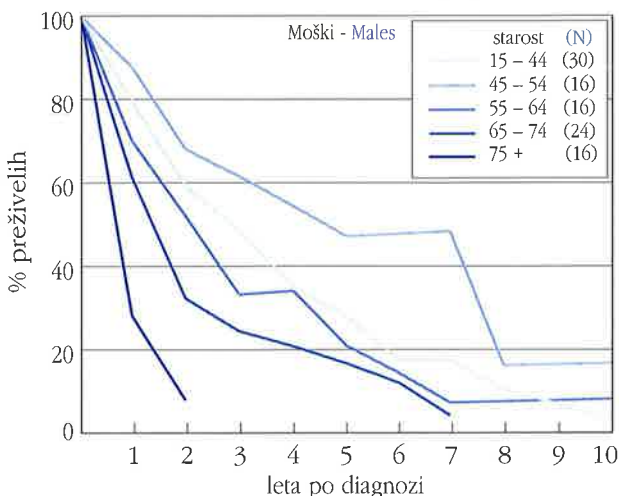
**TABELA 3:** Kronična mieločna levkemija. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Chronic Myeloid Leukemia. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	56.25	29.17	14.58	6.25	48.57	34.97	23.31	7.77	57.85	31.90	17.09	8.92	49.69	37.60	26.47	10.31
1968-72	61.70	21.28	8.51	4.26	64.71	37.26	21.57	5.08	63.37	23.09	9.78	5.68	66.15	39.87	24.17	6.44
1973-77	57.14	25.40	14.82	4.23	63.16	47.37	26.32	1.75	59.02	28.02	17.48	6.00	64.44	50.36	29.21	2.19
1978-82	69.41	38.30	26.33	2.39	63.44	37.19	17.50	4.38	71.36	41.73	30.49	3.24	64.83	39.88	19.86	5.96
1983-87	61.98	28.23	15.88		62.16	32.91	18.28		64.63	32.06	19.72		64.50	36.92	22.32	
1988-90	68.12	41.46			81.82	48.49			70.71	46.68			83.00	50.75		

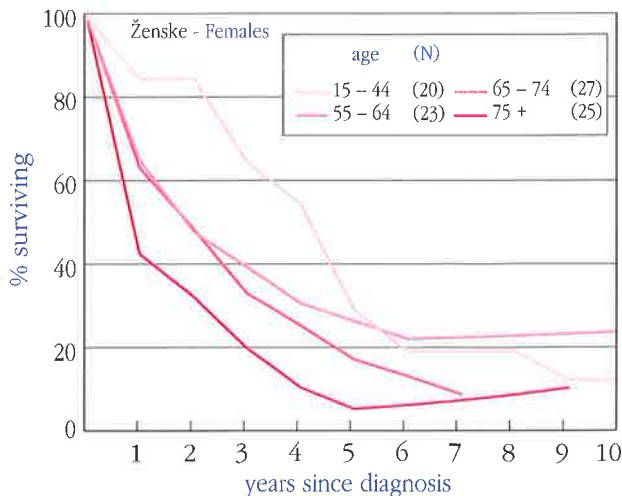
Pri moških se odstotek eno- in petletnega preživetja ni statistično značilno povečal, pri ženskah je bil odstotek enoletnega preživetja v zadnjem obdobju večji kot v preteklih (slika 2, tabela 3). Med moškimi bolniki smo registrirali večje odstotke preživetja v starostni skupini 45-54 let, med ženskami v starostni skupini 15-44 let (slika 3).

In males the relative one- and five- year survival rate was fairly stable, in females an increase in one- year survival rate was noticed in the last period (Figure 2, Table 3). In relation to age at diagnosis, male patients aged 45-54 years survived better than other patients. Female patients survived better in the age-group 15-44 years (Figure 3).

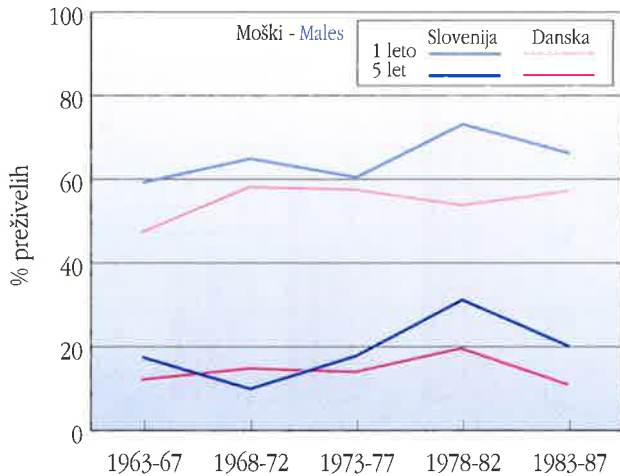
**SLIKA 3:** Relativno desetletno preživetje bolnikov z kronično mieločno levkemijo zbolelih v letih 1978 – 87 po spolu in starosti.



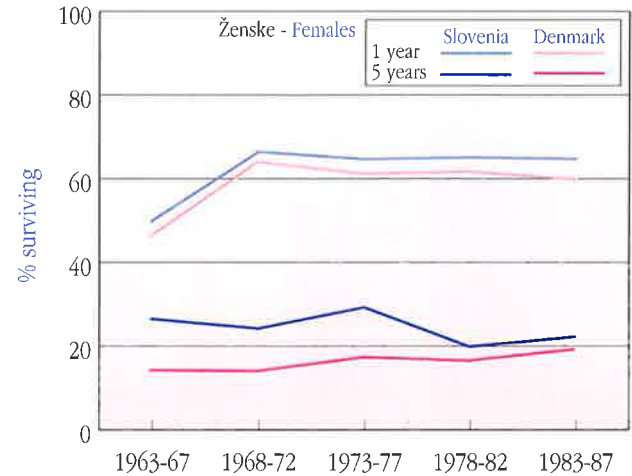
**FIGURE 3:** Relative ten-year survival of chronic myeloid leukemia patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov s kronično mieloično levkemijo, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of chronic myeloid leukemia patients, diagnosed in 1963-87 in Slovenia and Denmark, by sex and period of observation.



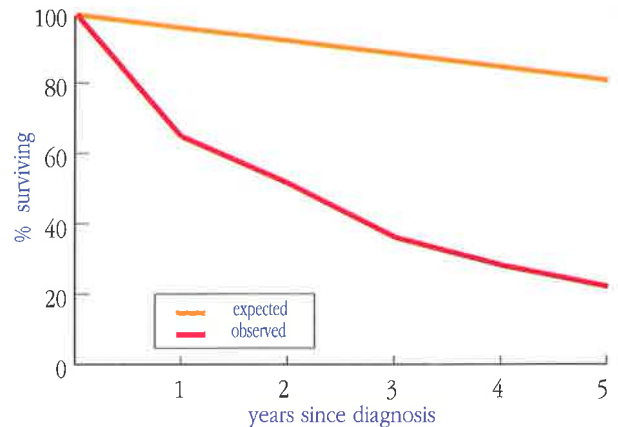
Bolniki s kronično mieloično levkemijo so v Sloveniji zdravljeni le v specializiranih ustanovah. Več kot 30 let se je za zdravljenje kroničnega obdobja te bolezni uporabljal večinoma le busulfan. V drugi polovici 80. let so predvsem v pospešenem poteku bolezni uvedli v zdravljenje še hidroksiureo, in sočasno izboljšali podporno zdravljenje. V obdobju 1988-90 so kostni mozeg presadili majhnemu številu bolnikov, zato ta način zdravljenja še ni pomembno vplival na preživetje.

In Slovenia, patients with chronic myeloid leukemia are treated exclusively in specialised institutions. For more than 30 years, most patients in the chronic phase of this disease were treated with busulfan alone. In the second half of the 80's hydroxyurea was added to the treatment, particularly in the accelerated phase of the disease, and at the same time the supportive therapy was improved. In the period 1988-90 bone marrow transplantations were performed in a small number of patients, and therefore the latter treatment approach could not significantly influence the survival.

# MULTIPLI MIELOM

## MULTIPLE MYELOMA

MKB 8 / ICD 8: 203



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z multiplim mielomom, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of multiple myeloma patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je bilo v Sloveniji registriranih z multiplim mielomom 443 moških in 481 žensk. Pri 36 bolnikih (4%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju registracija multiplega mieloma ni bila popolna. Registrirana incidenca je naraščala strmo v 60. in 70. letih pri obeh spolih (30). V letih 1963-67 je bila groba incidenčna mera 1,4/100.000 moških in 1,2/100.000 žensk, v letih 1988-90 pa 2,6/100.000 moških in 2,2/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 73% v letih 1963-67 na 94% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spreminjala (tabela 1). V najstarejši starostni skupini se je odstotek bolnikov povečal pri obeh spolih.

In the period 1963-90 a total of 443 male and 481 female patients with multiple myeloma were diagnosed in Slovenia. In 36 patients (4%) cancer was diagnosed at death and they are not included in the analysis.

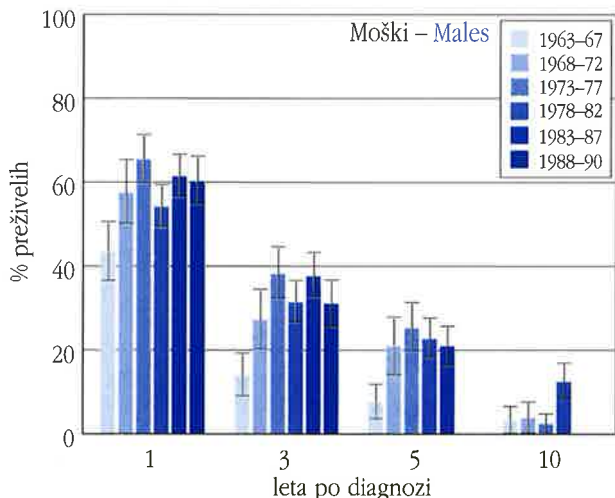
The incidence of multiple myeloma increased throughout the period of observation in both sexes (30), but the registration was never complete; after 1985, however, the completeness was improved. In the period 1963-67 the crude incidence rate was 1.4/100,000 males and 1.2/100,000 females; in 1988-90 it was 2.6/100,000 males and 2.2/100,000 females. The percentage of microscopically confirmed cases increased from 73% in 1963-67 to 94% in 1988-90. The age distribution changed (Table 1). The percentage of the eldest age group increased in both sexes.

**TABELA 1:** Multipli mielom. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

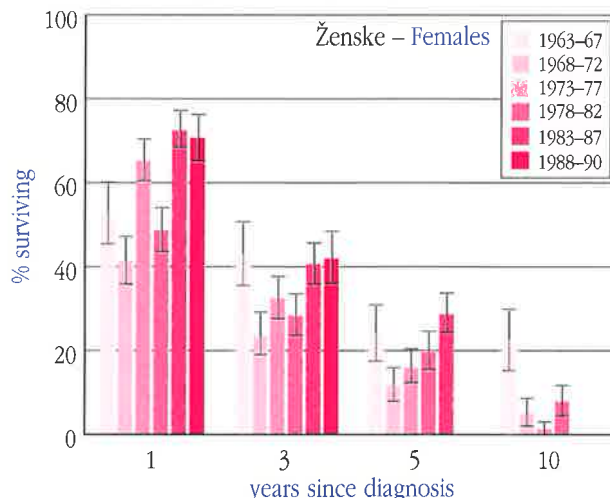
**TABLE 1:** Multiple Myeloma. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
Males	1963-67	49	0.0	12.2	14.3	32.7	30.6	10.2
	1968-72	42	0.0	7.1	19.0	33.3	28.6	11.9
	1973-77	69	0.0	5.8	15.9	30.4	39.1	8.7
	1978-82	98	0.0	9.2	15.3	21.4	41.8	12.2
	1983-87	95	0.0	4.2	10.5	31.6	36.8	16.8
	1988-90	73	0.0	2.7	11.0	46.6	21.9	17.8
1963-90	426	0.0	6.6	13.8	31.9	34.3	13.4	
Females	1963-67	47	0.0	6.4	19.1	38.3	27.7	8.5
	1968-72	70	0.0	4.3	11.4	27.1	47.1	10.0
	1973-77	87	0.0	8.0	18.4	17.2	43.7	12.6
	1978-82	88	0.0	3.4	8.0	19.3	43.2	26.1
	1983-87	103	0.0	3.9	9.7	33.0	32.0	21.4
	1988-90	67	0.0	4.5	13.4	19.4	34.3	28.4
1963-90	462	0.0	5.0	12.8	25.1	38.5	18.6	

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z multiplim mielomom zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with multiple myeloma diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Multipli mielom. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Multiple Myeloma. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis				Years since diagnosis				Years since diagnosis				Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	41.67	12.50	6.25	2.08	51.16	39.54	20.93	16.28	43.23	14.08	7.73	3.40	52.36	42.62	23.96	22.41
1968-72	54.76	23.81	16.67	2.38	40.00	21.43	10.00	3.64	57.07	27.14	20.91	3.93	41.24	23.62	11.87	5.39
1973-77	62.32	33.33	20.09	1.55	63.22	29.89	13.79	1.15	64.95	37.96	25.16	2.55	64.83	32.42	15.96	1.63
1978-82	51.55	27.35	17.88	7.36	46.59	25.00	15.91	4.93	53.79	31.29	22.63	12.48	48.46	28.31	19.79	8.09
1983-87	58.29	32.38	16.19		69.90	36.89	24.27		61.02	37.44	20.88		72.04	40.54	28.63	
1988-90	57.53	27.40			68.18	37.88			59.83	30.98			70.30	41.81		

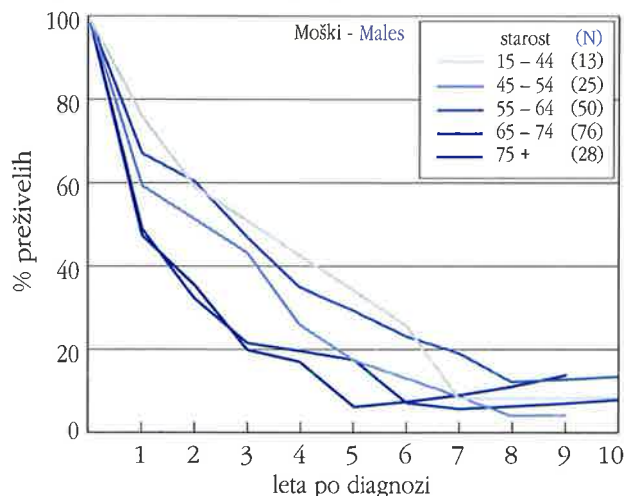
Odstotek relativnega eno- in petletnega preživetja se je povečeval pri moških do leta 1977, pri ženskah pa se je odstotek petletnega preživetja povečeval od leta 1968 do 1987 (slika 2, tabela 3).

The relative five-year survival rate increased in males till 1977, and in females till 1987 (Figure 2, Table 3).

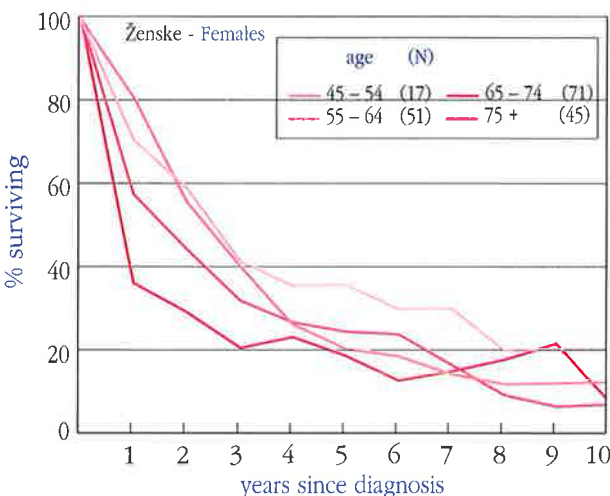
Odstotek relativnega petletnega preživetja je bil večji pri mlajših bolnikih obeh spolov (slika 3).

In relation to age at diagnosis younger patients of both sexes survived better than the elderly (Figure 3).

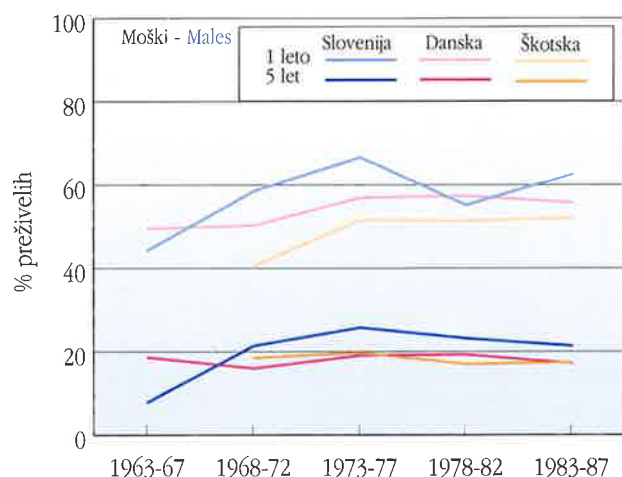
**SLIKA 3:** Relativno desetletno preživetje bolnikov z multiplim mielomom zbolelih v letih 1978 – 87 po spolu in starosti.



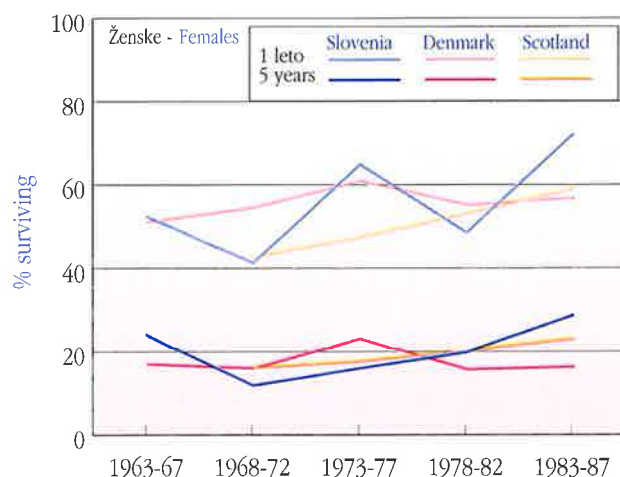
**FIGURE 3:** Relative ten-year survival of multiple myeloma patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z multiplim mielomom, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



**Figure 4:** One- and five-year relative survival rates of multiple myeloma patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



Preživetje bolnikov s plazmocitomom je odvisno od razvojne stopnje in naravnega poteka bolezni, ledvične funkcije in uspešnosti zdravljenja. Podrobnih podatkov o tem ni v Registru. V retrospektivni analizi 107 bolnikov, zdravljenih na Onkološkem inštitutu v letih 1965-80, smo ugotovili difuzni plazmocitom pri 90, solitarni medularni pri 9 in solitarni ekstramedularni plazmocitom pri 8 bolnikih. Pri 74 bolnikih je bila bolezen odkrita v razvojni stopnji II. V stopnji I je bila odkrita pri 17, v stopnji III pri 16 bolnikih. Pri bolnikih z boleznijo v stopnji II je bilo preživetje 1-4 leta, pri tistih v stopnji I pa tudi do 20 let.

Pri zdravljenju multiplega mieloma so v začetku 70. let uporabljali polikemoterapijo po shemi Lee. Konec 70. let so uvedli alkeran in prednisolon, ki se uporabljata še danes. Vseskozi so obsevali kostne lokalizacije zaradi bolečin ali grozečih prelomov. V zadnjih letih se pri mlajših bolnikih uporablja intenzivnejša kemoterapija (VAD). Solitarni medularni in ekstramedularni plazmocitom zdravimo z obsevanjem.

Bolniki s prognostično najslabšo boleznijo živijo dlje deloma zaradi uspešnejše kemoterapije, deloma pa zaradi uspešnejšega podpornega zdravljenja hiperkalcemije, akutne ledvične odpovedi, okužb, hiperviskoznega sindroma itd.

Več kot 10 let preživijo bolniki z začetnimi razvojnimi stopnjami multiplega mieloma in tisti s solitarnim medularnim in ekstramedularnim plazmocitomom.

Večji odstotki petletnega relativnega preživetja pri mlajših bolnikih so posledica zgodnejše diagnoze bolezni, deloma pa tudi intenzivnejše kemoterapije.

The survival of patients with multiple myeloma depends on the stage and natural course of the disease, as well as on renal function and treatment success. Detailed data on this cannot be found in the Registry. In a retrospective analysis of 107 patients treated at the Institute of Oncology in the years 1965-80 diffuse plasmocytoma was found in 90 patients, solitary medullary plasmocytoma in 9, and solitary extramedullary plasmocytoma in 8 patients. When diagnosed, in the majority of patients (74) the disease was in stage II; 17 patients had stage I, and 16 stage III of the disease. The survival of the patients with stage II was 1-4 years, while in those with stage I it was up to 20 years.

At the beginning of the 70's multiple myeloma was treated by chemotherapy according to the Lee schedule. By the end of the same decade alkeran and prednisolon were introduced, and have been used ever since then. Bone lesions have been invariably treated by irradiation to alleviate pain and reduce the risk of fractures. In recent years, younger patients have been treated by more intensive treatment regimens (VAD). Solitary medullary and extramedullary plasmocytomas are treated by irradiation.

The better survival of patients with prognostically unfavourable disease is due partly to more effective chemotherapy and partly to better supportive treatment for hypercalcaemia, acute renal failure, infection, hyperviscosity syndrome etc.

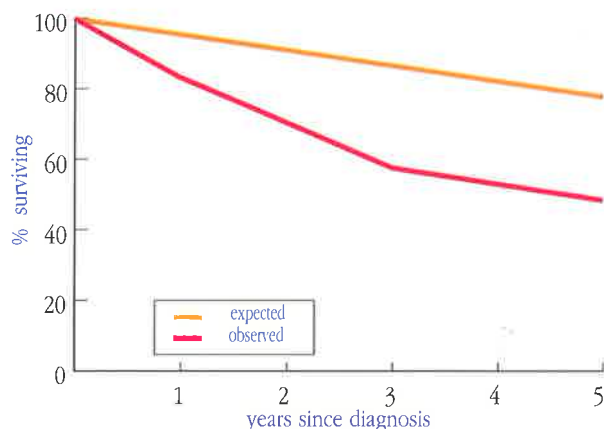
Survivals longer than 10 years have been observed in patients with early stages of multiple myeloma, and those with solitary medullary or extramedullary plasmocytomas.

The higher relative survival rates in younger patients are partly attributable to earlier diagnosis and partly to more intensive chemotherapy.

# MALIGNI MELANOM

## MALIGNANT MELANOMA

MKB 8 / ICD 8: 172



SLIKA 1: Opazovano in pričakovano petletno preživetje bolnikov z malignim melanomom, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five - year survival of malignant melanoma patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za malignim melanomom kože 732 moških in 1059 žensk. Pri 43 bolnikih (2%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca malignega melanoma naraščala pri obeh spolih, strmeje v 80. letih (30,83). V letih 1963-67 je bila groba incidenčna mera 1,7/100.000 moških in 2,6/100.000 žensk, v letih 1988-90 pa 5,1/100.000 moških in 6,2/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal z 90% v letih 1963-67 na 100% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spremenila (tabela 1). V vsakem zaporednem obdobju je bil odstotek starejših večji. Največ bolnikov obeh spolov je bilo v starostni skupini 15-44 let. Spreminjala se je tudi razširitev bolezni pred zdravljenjem. Pri moških je bila manj ugodna v obdobjih 1978-82 in

In the period 1963-90 a total of 732 male and 1059 female patients with skin malignant melanoma were diagnosed in Slovenia. In 43 patients (2%) cancer was diagnosed at death and they are not included in the analysis.

The incidence increased in both sexes, the increase being steeper in the 80's (30,83). In 1963-67 the crude incidence rate was 1.7/100,000 males and 2.6/100,000 females; in 1988-90 it was 5.1/100,000 males and 6.2/100,000 females. The percentage of microscopically confirmed cases increased from 90% in 1963-67 to 100% in 1988-90. The age distribution changed. More cases in the elderly age groups were diagnosed in each subsequent period of observation (Table 1). Most patients were in the age-group 15-44 years. The stage distribution differed. In males it was less favourable in two periods: 1978-82, and 1988-90, while in females it was less favourable in each subsequent time- period (Table 2).

TABELA 1: Maligni melanom. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: Malignant Melanoma. Patients included in the analysis by sex, age and period of observation.

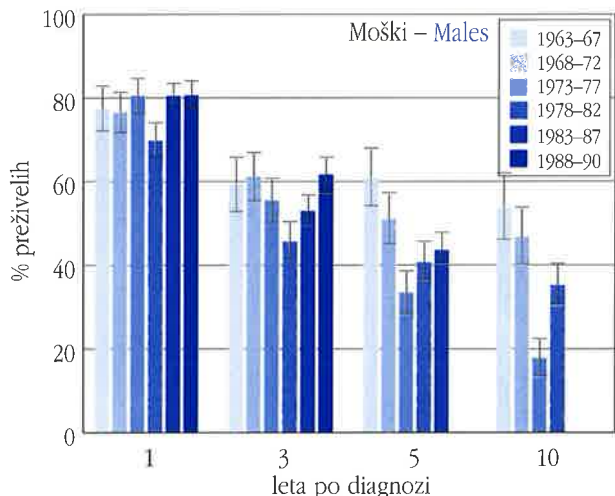
	Period of observation	No.	Age at diagnosis (%)					
			-14	15-44	45-54	55-64	65-74	75+
Males	1963-67	63	3.2	38.1	19.0	19.0	12.7	7.9
	1968-72	81	6.2	33.3	19.8	21.0	12.3	7.4
	1973-77	95	1.1	34.7	23.2	18.9	14.7	7.4
	1978-82	126	1.6	30.2	24.6	21.4	14.3	7.9
	1983-87	205	0.0	22.9	22.9	28.3	15.6	10.2
	1988-90	147	0.0	26.5	19.7	22.4	21.1	10.2
	1963-90	717	1.4	29.0	21.9	23.0	15.8	8.9
Females	1963-67	107	2.8	45.8	15.0	20.6	7.5	8.4
	1968-72	145	2.1	47.6	15.9	9.0	17.9	7.6
	1973-77	135	0.0	33.3	19.3	14.8	22.2	10.4
	1978-82	176	0.0	26.7	18.8	22.2	21.0	11.4
	1983-87	279	0.4	33.7	16.1	15.4	19.7	14.7
	1988-90	189	0.5	27.5	19.0	23.3	15.9	13.8
	1963-90	1031	0.8	34.5	17.4	17.6	18.0	11.7

TABELA 2: Maligni melanom. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

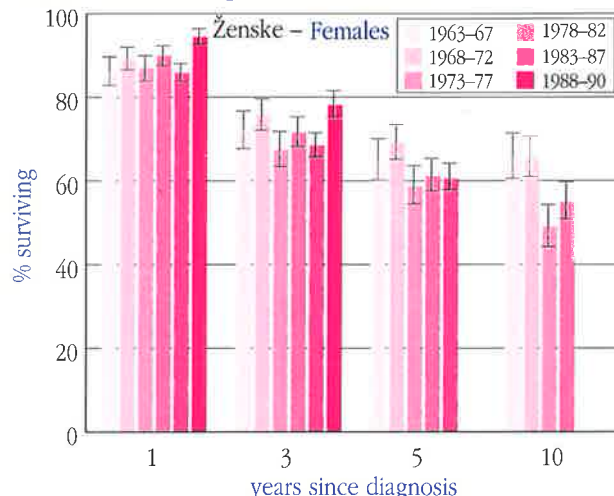
TABLE 2: Malignant Melanoma. Patients included in the analysis by sex, extent of disease and period of observation.

	Period of observation	No.	Extent of disease (%)			
			Localized	Regional	Distant	Unknown
Males	1963-67	63	-	-	-	-
	1968-72	81	70.4	11.1	16.0	2.5
	1973-77	95	72.6	14.7	8.4	4.2
	1978-82	126	66.7	15.1	9.5	8.7
	1983-87	205	72.2	12.7	9.8	5.4
	1988-90	147	65.3	21.8	9.5	3.4
	1963-90	717	69.4	15.3	10.2	5.0
Females	1963-67	107	-	-	-	-
	1968-72	145	84.8	9.7	4.8	0.7
	1973-77	135	82.2	11.1	4.4	2.2
	1978-82	176	80.1	9.1	6.8	4.0
	1983-87	279	78.9	10.0	7.2	3.9
	1988-90	189	79.9	14.8	3.7	1.6
	1963-90	1031	80.7	10.9	5.6	2.7

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z malignim melanomom zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with malignant melanoma diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Malignni melanom. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Malignant Melanoma. Observed and relative survival by sex and period of observation.

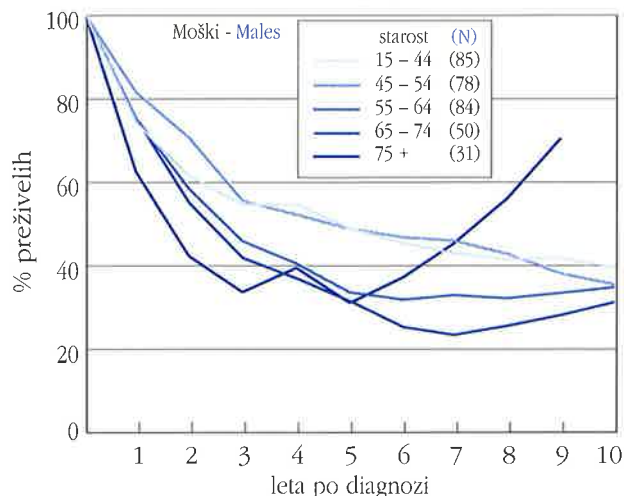
Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	74.60	53.97	52.38	39.49	83.96	67.89	59.21	55.26	76.74	58.80	60.59	53.47	85.47	71.49	64.41	65.17
1968-72	73.75	55.74	44.07	35.00	86.81	71.41	63.00	54.49	75.86	60.64	50.65	46.45	88.27	75.13	68.63	65.17
1973-77	77.78	50.87	29.10	13.43	84.39	62.59	52.04	38.46	79.81	55.05	33.27	17.80	86.23	66.91	58.27	48.75
1978-82	67.46	41.98	35.52	26.64	87.46	66.85	54.72	43.66	69.17	45.32	40.45	35.10	89.21	71.06	60.74	54.68
1983-87	77.45	48.04	37.22		83.39	63.81	54.02		79.78	52.60	43.37		85.11	67.98	60.24	
1988-90	77.55	55.78			92.02	73.40			79.95	61.21			93.68	77.54		

1988-90, pri ženskah pa v vsakem naslednjem obdobju opazovanja (tabela 2). Odstotki tri- in petletnega preživetja so bili vseskozi statistično značilno večji pri ženskah kot pri moških (slika 2, tabela 3). Odstotek relativnega triletnega preživetja se je v obdobju 1988-90 povečal v primerjavi z dvema predhodnima obdobjema.

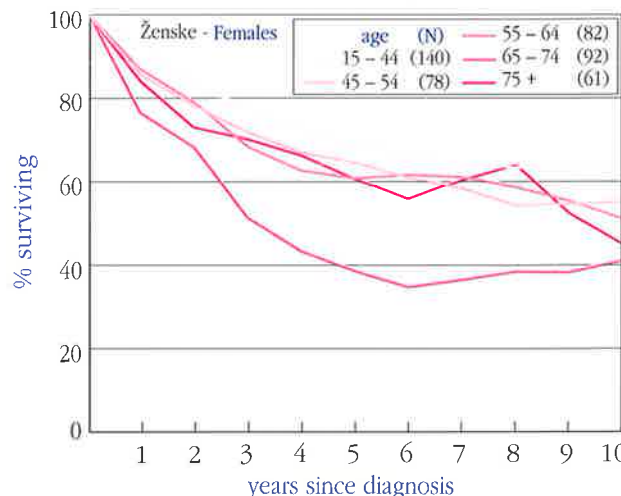
The three- and five-year relative survival rates were significantly better in females than in males (Figure 2, Table 3). In 1988-90 the three-year relative survival rates were higher than in the two previous periods.

The five-year relative survival rates were higher in males till the age of 54 years, and in females till the age of 64 years than in the elderly (Figure 3).

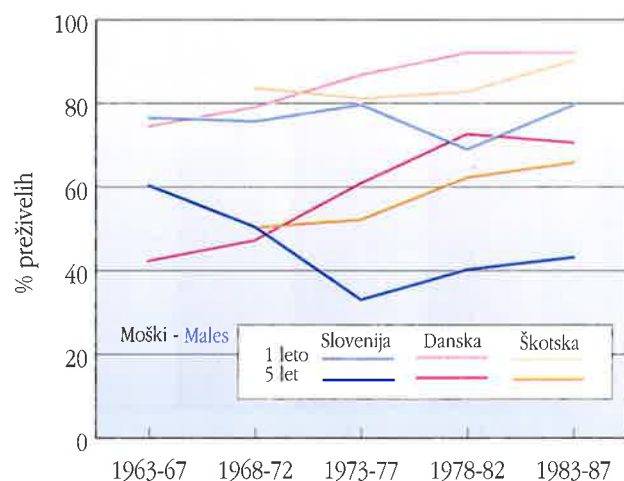
**SLIKA 3:** Relativno desetletno preživetje bolnikov z malignim melanomom zbolelih v letih 1978 – 87 po spolu in starosti.



**FIGURE 3:** Relative ten-year survival of malignant melanoma patients diagnosed in the period 1978 – 87 by sex and age.



**Slika 4:** Eno- in petletno relativno preživetje bolnikov z malignim melanomom, zbolelih v letih 1963-87 v Sloveniji, na Danskem in na Škotskem po spolu in obdobjih opazovanja.



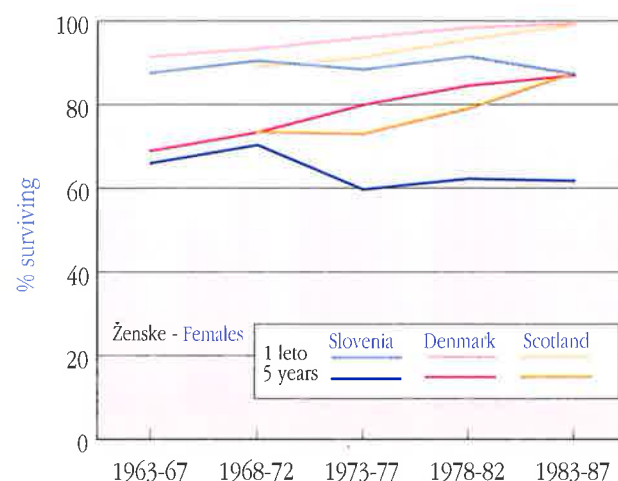
Glede na starost je bil odstotek petletnega preživetja večji pri mlajših, pri moških do 54. leta starosti, pri ženskah pa do 64. leta starosti (slika 3).

Preživetje bolnikov z malignim melanomom je statistično značilno povezano z globino invazije in debelino primarnega tumorja. Odstotek debelejših melanomov (Clark IV, V in/ali debelina več kot 1,5 mm) je v Sloveniji zelo visok. V analizi preživetja 258 bolnikov z malignim melanomom (84), ki so bili zdravljeni na Onkološkem inštitutu v letih 1970-83, so ugotovili 71% debelejših melanomov pri moških in 49% pri ženskah. Pred letom 1983 tudi niso bile opravljene sistematične revizije histoloških diagnoz z določitvijo globine invazije in debeline tumorjev. Obe dejstvi lahko vplivata na rezultate preživetja, saj so morali v prej omenjeni raziskavi izključiti 10% bolnikov zaradi nezanesljive ali nepopolne histološke diagnoze. Odstotek petletnega preživetja pri ženskah je znašal v omenjeni raziskavi 66,4% in pri moških 38,5%. Rezultati revizije histološke diagnoze pri teh 10% bolnikov pa niso bili sporočeni Registru. S tem lahko deloma pojasnimo razmeroma velike odstotke relativnega preživetja pred letom 1972.

Metoda izbora za zdravljenje primarnega malignega melanoma je bila v preteklosti in je še danes radikalna operacija. Rezultati zdravljenja napredovale bolezni z zasevki so še vedno nezadovoljivi. S sistemskim zdravljenjem s kemoterapijo lahko dosežemo odgovor le pri približno 20% bolnikov. Trajanje odgovora je običajno kratko.

Do leta 1988 ni bilo pomembnejših sprememb pri zdravljenju bolnikov z malignim melanomom. V letu 1988 smo pričeli s študijo dodatnega zdravljenja po radikalni operaciji primarnega tumorja pri bolnikih z debelejšimi, prognostično neugodnimi tumorji s humanim levkocitnim interferonom. Rezultati klinične študije so pokazali statistično značilno boljše preživetje bolnikov, ki so bili zdravljeni z interferonom v primerjavi s tistimi, ki niso bili tako zdravljeni (85,86). Leta 1992 je bilo pri prognostično neugodnih tumorjih (globina invazije Clark IV, V in/ali debelina tumorja več kot 1,5 mm) dodatno zdravljenje z interferonom sprejeto v vsakdanjo rabo.

**Figure 4:** One- and five year relative survival rates of malignant melanoma patients, diagnosed in 1963-87 in Slovenia, Denmark and Scotland, by sex and period of observation.



The major impact on survival in malignant melanoma is correlated with the Clark level of invasion and thickness of primary tumor. The percentage of thicker melanomas (Clark level IV and V and/or thickness more than 1.5 mm) in Slovenia is rather high. In a survival analysis of 258 melanoma patients (84) treated at the Institute of Oncology during the years 1970-83 there was 71% cases of thicker melanoma in male and 49% in female patients. Furthermore, before 1983 there was no systematic reexamination of histological diagnosis. In the above-mentioned analysis about 10% patients were excluded due to unreliable histology, and the five-year survival rates were 38.5% in males and 66.4% in females. These revisions were not completely reported to the Registry, which could partly explain the relatively high relative survival rates before 1972.

The treatment of choice for primary skin malignant melanoma has been surgical excision of the tumor. The treatment of the disseminated disease is still unsatisfactory. Response to various systemic treatments (chemotherapy) is in the range of only 20% with short duration.

There were no major changes in malignant melanoma treatment till 1988, when adjuvant treatment with interferon was introduced after surgical excision of primary tumors. The results of the randomised prospective study revealed a significant impact of adjuvant therapy on survival (85,86). In 1992 adjuvant therapy with interferon was accepted as standard treatment for patients with thicker melanoma (Clark level of invasion IV, V and/or thickness more than 1.5 mm).

Not taking into account the patients from 1963-72, when histology was often unreliable, an increase in the survival of males and females can be observed (Figures 2 and 3, Table 3). The reasons for this can be ascribed to the improved patient care (referral of patients to the outpatient department for Melanoma at the Institute of Oncology in Ljubljana, which ensures uniform doctrinary approach to the diagnosis and treatment), and partly also to the influence of adjuvant therapy after surgical removal of the primary tumor; nevertheless, it is probably still too early to draw any definitive conclusions



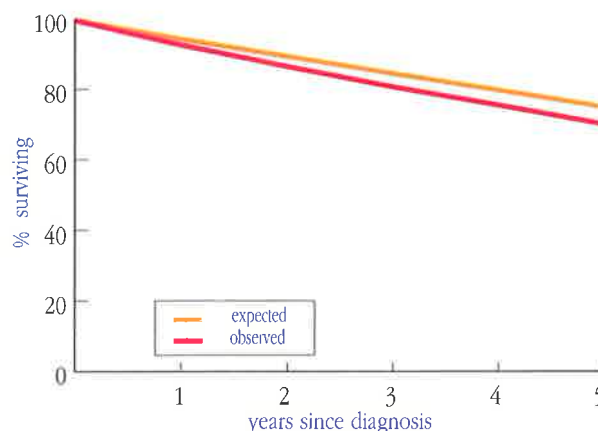
Če ne upoštevamo bolnikov iz obdobja 1963-72, ko je bila histološka diagnoza nezanesljiva, se nakazuje izboljšanje preživetja tako pri moških kot tudi pri ženskah (sliki 2 in 3, tabela 3). Razloga sta lahko boljša oskrba bolnikov (pošiljanje bolnikov v melanomsko ambulanto Onkološkega inštituta in s tem zagotavljanje enotnih doktrinarnih pristopov v diagnostiki in v zdravljenju) in dodatno zdravljenje po operativni odstranitvi primarnega tumorja. Verjetno pa je še prezgodaj, da bi dokončno ocenili vpliv tega zdravljenja na preživetje celotne populacije bolnikov v Sloveniji.

on the influence of such treatment on the survival of the total cancer patient population in Slovenia.

## NEMELANOMSKI RAK

## NON-MELANOMA

MKB 8 / ICD 8: 173



**SLIKA 1:** Opazovano in pričakovano petletno preživetje bolnikov z nemelanomskim kožnim rakom, zbolelih v letih 1983 – 87 v Sloveniji.

**FIGURE 1:** Observed and expected five - year survival of non-melanoma skin cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 sta zbolela v Sloveniji za nemelanomskim kožnim rakom, vključno za bazaliomi, 5202 moška in 6619 žensk. Pri 68 bolnikih (0,6%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo.

V opazovanem 28-letnem obdobju je incidenca kožnega raka pri obeh spolih le rahlo naraščala v 60. in 70., v 80. letih pa je bila ustaljena (30,31,87). V letih 1963-67 je bila groba incidenčna mera 17,9/100.000 moških in 20,7/100.000 žensk, v letih 1988-90 pa 25,2/100.000 moških in 26,9/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal z 82% v letih 1963-67 na 97% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spremenila (tabela 1). V vsakem zaporednem obdobju je bil odstotek starejših večji. Razširitev bolezni ob ugotovitvi se ni spreminjala (tabela 2). Lokalizirana bolezen je bila ugotovljena pri 97% bolnikov.

**TABELA 1:** Nemelanomski rak. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

**TABLE 1:** Non-melanoma. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)						
		-14	15-44	45-54	55-64	65-74	75+	
Moški	1963-67	701	0.1	9.1	13.1	26.7	31.4	19.5
	1968-72	722	0.0	9.3	11.1	27.8	32.7	19.1
	1973-77	922	0.0	9.7	16.1	19.4	36.0	18.9
	1978-82	1069	0.0	7.0	16.9	20.0	32.1	23.9
	1983-87	1036	0.2	5.3	13.2	25.0	29.6	26.6
	1988-90	730	0.0	4.0	12.9	26.0	25.5	31.6
1963-90	5180	0.1	7.3	14.1	23.7	31.4	23.4	
Ženske	1963-67	886	0.0	7.2	10.9	24.7	32.2	24.9
	1968-72	987	0.0	6.0	10.0	22.7	36.4	24.9
	1973-77	1243	0.0	5.0	11.3	20.1	36.0	27.7
	1978-82	1338	0.1	4.6	11.3	20.2	30.0	33.9
	1983-87	1293	0.1	4.5	8.3	18.7	26.1	42.3
	1988-90	826	0.0	4.8	6.4	16.8	26.6	45.3
1963-90	6573	0.0	5.2	9.8	20.4	31.2	33.2	

In the period 1963-90 a total of 5202 male and 6619 female non-melanoma skin cancer (incl. basal cell carcinoma) patients were diagnosed in Slovenia. In 68 patients (0.6%) cancer was diagnosed at death and they are not included in the analysis.

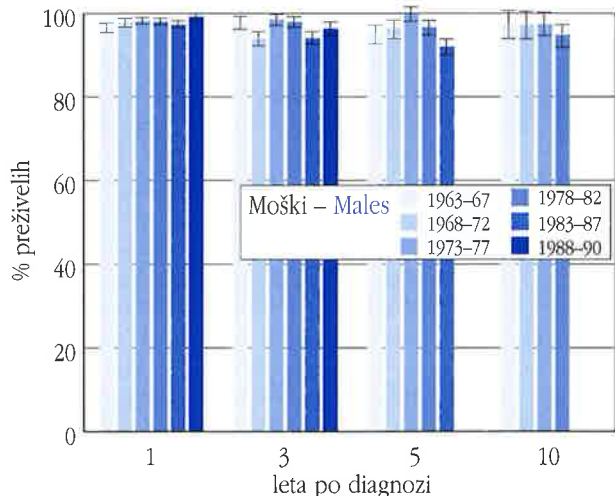
In this time-period the incidence of skin non-melanoma cancer slightly increased in the 60's and 70's and was almost stable in the 80's (30,31,87). In the period 1963-67 the crude incidence rate was 17.9/100,000 males and 20.7/100,000 females; in 1988-90 it was 25.2/100,000 males and 26.9/100,000 females. The percentage of microscopically confirmed cases increased from 82% in 1963-67 to 97% in 1988-90. The age distribution changed (Table 1). The percentage of the eldest age-group increased in each subsequent time-period. The extent of disease at diagnosis did not change. On average 97% of patients were diagnosed in the localized stage (Table 2).

**TABELA 2:** Nemelanomski rak. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

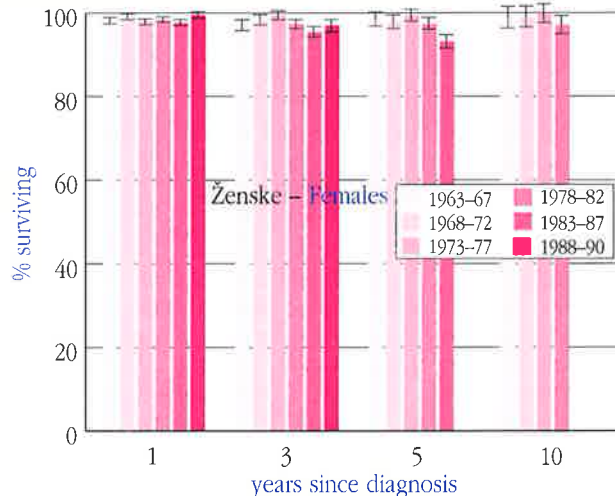
**TABLE 2:** Non-melanoma. Patients included in the analysis by sex, extent of disease and period of observation.

Period of observation	No.	Extent of disease (%)				
		Localized	Regional	Distant	Unknown	
Moški	1963-67	701	-	-	-	-
	1968-72	722	95.3	2.6	0.7	0.7
	1973-77	922	97.6	1.8	0.3	0.1
	1978-82	1069	96.9	2.1	0.8	0.2
	1983-87	1036	95.5	4.0	0.3	0.3
	1988-90	730	97.0	2.7	0.1	0.1
1963-90	5180	96.5	2.7	0.5	0.3	
Ženske	1963-67	886	-	-	-	-
	1968-72	987	97.0	1.6	0.3	0.6
	1973-77	1243	97.7	1.4	0.4	0.2
	1978-82	1338	96.9	2.1	0.7	0.2
	1983-87	1293	96.4	2.7	0.5	0.2
	1988-90	826	97.2	1.7	0.2	0.7
1963-90	6573	97.0	2.0	0.4	0.4	

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja bolnikov z nemelanomskim rakom zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with non-melanoma cancer diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Nemelanomski rak. Opazovano in relativno preživetje po spolu in obdobju opazovanja.  
**TABLE 3:** Non-melanoma. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	1		3		5		10		1		3		5		10	
1963-67	92.64	83.87	72.50	53.54	94.44	85.31	78.66	60.62	97.55	98.50	95.83	97.95	98.72	97.73	99.25	99.45
1968-72	93.38	80.19	73.25	54.17	94.99	85.79	77.42	59.71	98.58	94.69	97.12	97.94	99.58	98.94	98.55	99.62
1973-77	94.03	85.09	77.38	55.82	94.19	87.34	79.15	60.92	98.87	99.24	100.68	98.09	98.46	100.09	100.02	100.71
1978-82	93.62	83.70	73.45	52.25	94.48	85.03	77.10	58.41	98.74	98.67	97.39	95.52	98.95	97.93	98.04	97.83
1983-87	92.59	79.56	68.78		93.13	81.36	70.53		97.98	94.73	92.68		98.29	96.02	93.82	
1988-90	94.22	81.01			94.76	82.75			99.88	97.04			99.92	97.64		

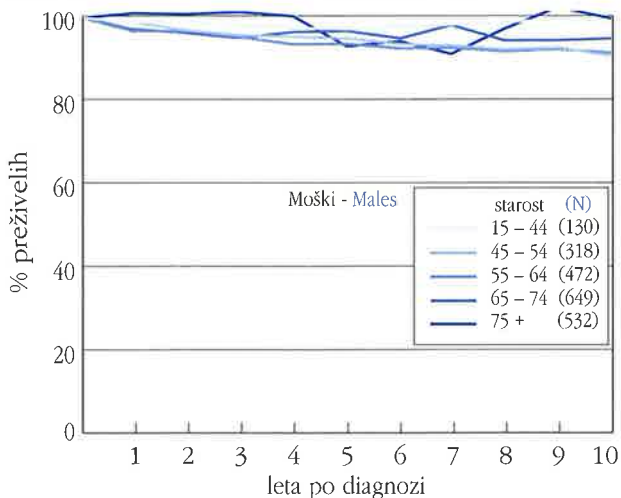
Odstotki preživetja so bili v vsem opazovanem obdobju visoki in brez izrazitih nihanj (slika 2, tabela 3). Odstotek petletnega preživetja se je zmanjšal v letih 1983-87. V oceni petletnega relativnega preživetja ni bilo pomembnejših razlik glede na starost (slika 3).

Kožni rak je eden redkih rakov, ki skoraj ne vpliva na preživetje bolnikov. Ozdravitev dosežemo pri več kot 95%

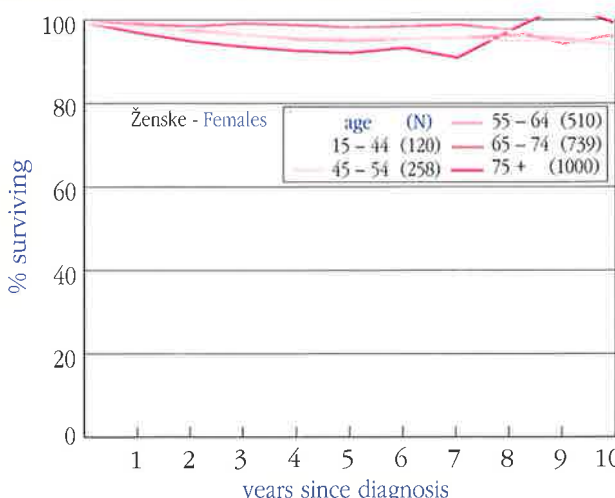
No major changes in relative survival rate in either sex were observed (Figure 2, Table 3). The five-year survival rate decreased in the time-period 1983-87. In relation to age at diagnosis no major differences in relative survival were observed (Figure 3).

Skin cancer is one of the few cancers which exert almost no influence on the patients' survival. Cure can be achieved in

**SLIKA 3:** Relativno desetletno preživetje bolnikov z nemelanomskim rakom zbolelih v letih 1978 – 87 po spolu in starosti.



**FIGURE 3:** Relative ten-year survival of non-melanoma cancer patients diagnosed in the period 1978 – 87 by sex and age.



bolnikov, saj je bolezen pri 97% bolnikov ugotovljena v zgodnjem, lahko ozdravljivem stadiju, ker raste počasi in se razvije pretežno na lahko opaznih mestih (87).

Operacija je najpogostejši način zdravljenja. Napredek operativne tehnike, predvsem tehnika vezanih in prostih režnjev, je povečala možnosti operativnega zdravljenja.

Pri obsevanju je prišlo do tehničnih in vsebinskih sprememb. Posledica tehničnega napredka je možnost obsevanja z elektroni, ki presega nekatere omejitve starejših načinov obsevanja. Druga novost je povečana skrb za estetski učinek, oziroma zmanjšanje posledic obsevanja. Opazen je premik k večjemu številu frakcij, 6-10, v primerjavi z obdobjem 1963-73, ko je bilo 85% bolnikov obsevanih z 1-3 frakcijami. Tudi celokupna doza, oziroma njen ekvivalent se je znižal tako, da je sedaj ekvivalent približno 70 Gy. Vse omenjene spremembe v obsevanju niso poslabšale uspehov. Delež ozdravitev je enak, estetske in funkcionalne posledice obsevanja pa so se zelo zmanjšale.

V 80. letih so se razvili novi načini zdravljenja kot je lokalna kemoterapija, fotodinamična terapija ter zdravljenje z interferonom. Uporabljamo jih v primerih, ko standardno zdravljenje ni možno.

Nakazano zmanjšanje odstotka petletnega preživetja v obdobju 1983-87 bo pojasnila podrobna analiza. Lahko pa si ga razlagamo tudi z natančnejšo registracijo smrti bolnikov po vzpostavitvi povezave s CRP.

more than 95% of patients, since in most cases (97%) the disease is discovered in its early, easily curable stage. Early diagnosis is possible because these tumors grow slowly and develop mostly in easily accessible sites (87).

The most frequent method of treatment is surgery. Advances in surgical technique, particularly the technique of bound and free flaps, have greatly enhanced the treatment possibilities.

Irradiation has undergone some technical and contextual changes. Advances in technology have made possible irradiation with electron beams, a technique which shows many advantages over some other, previously used methods. Greater care has been taken to improve the esthetic outcome of treatment and reduce the treatment-related side effects. Another change concerns the number of fractions used (6-10), as compared with the period 1963-73, when 85% of patients were irradiated with 1-3 fractions. In addition, the total dose, or its equivalent, has been reduced, thus bringing it into the range of 70 Gy. All the changes mentioned have not adversely affected the treatment results. The rate of cure has remained the same, while the esthetic and functional site effects of treatment have been greatly reduced.

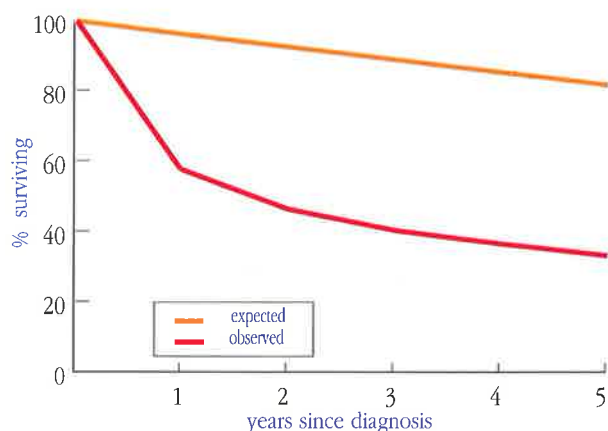
In the 80's, new treatment modalities such as local chemotherapy, photodynamic therapy and treatment with interferon were introduced. These are used when the standard approach is not feasible.

The indicated decrease in the five-year survival rates in the period 1983-87 will be explained by detailed analysis. It could be explained also by more accurate death registration after a routine linkage with the Population Registry of Slovenia was established.

## VSI RAKI, VŠTEVŠI KOŽNI

## ALL SITES INCL. SKIN

MKB 8 / ICD 8: 140-209



SLIKA 1: Opazovano in pričakovano petletno preživetje vseh bolnikov z rakom, zbolelih v letih 1983 – 87 v Sloveniji.

FIGURE 1: Observed and expected five-year survival of all cancer patients diagnosed in the period 1983 – 87 in Slovenia.

V obdobju 1963-90 je zbolelo v Sloveniji za vsemi raki skupaj 67765 moških in 65569 žensk. Pri 11544 bolnikih (9%) je bil rak ugotovljen ob smrti in zato niso bili vključeni v analizo. V tem poglavju je prikazano preživetje za vse bolnike z rakom, tudi za tiste, ki smo jih v posameznih poglavjih izpustili, ker so v Sloveniji relativno redki.

V opazovanem 28-letnem obdobju je incidenca vseh rakavih bolezni zmerno naraščala (30,31). V letih 1963-67 je bila groba incidenčna mera 223/100.000 moških in 211,2/100.000 žensk, v letih 1988-90 pa 330/100.000 moških in 293,8/100.000 žensk. Odstotek mikroskopsko potrjenih primerov se je povečal s 73% v letih 1963-67 na 91% v letih 1988-90. Starostna porazdelitev v analizo zajetih bolnikov se je spremenila (tabela 1). Odstotek otrok se je zmanjšal, odstotek starejših se je povečal. Razširitev bolezni ob ugotovitvi se je tudi spreminjala (tabela 2).

TABELA 1: Vsi raki. Bolniki vključeni v analizo po spolu, starosti in obdobju opazovanja.

TABLE 1: All Sites. Patients included in the analysis by sex, age and period of observation.

Period of observation	No.	Age at diagnosis (%)					
		-14	15-44	45-54	55-64	65-74	75+
<b>Males</b>							
1963-67	7609	1.0	9.0	11.0	32.0	32.0	13.0
1968-72	8673	1.0	9.0	10.0	28.0	36.0	13.0
1973-77	10572	1.0	9.0	15.0	22.0	35.0	16.0
1978-82	12223	1.0	8.0	18.0	21.0	32.0	17.0
1983-87	13438	1.0	8.0	16.0	28.0	25.0	21.0
1988-90	8975	0.0	8.0	14.0	31.0	23.0	20.0
1963-90	61463	1.0	8.0	14.0	27.0	30.0	17.0
<b>Females</b>							
1963-67	7978	1.0	16.0	16.0	27.0	25.0	12.0
1968-72	8853	1.0	14.0	16.0	26.0	28.0	13.0
1973-77	10575	0.0	13.0	18.0	20.0	30.0	17.0
1978-82	11537	0.0	11.0	17.0	21.0	27.0	20.0
1983-87	12865	0.0	11.0	14.0	24.0	23.0	24.0
1988-90	8547	0.0	11.0	13.0	24.0	23.0	26.0
1963-90	60327	0.0	12.0	16.0	24.0	26.0	19.0

In the period 1963-90 a total of 67,765 male and 65,569 female cancer patients were diagnosed in Slovenia. In 11,544 patients (9%) cancer was diagnosed at death and they are not included in the analysis. In this chapter, data for all cancer patients are presented. Also patients with rare cancers are included.

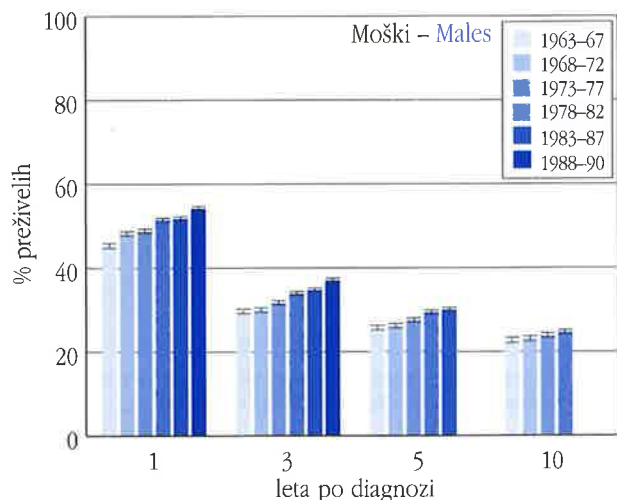
In observed 28-year time-period the incidence of all cancer sites together increased moderately in both sexes (30,31). In 1963-67 the crude rate was 223/100,000 males and 211.2/100,000 females; in 1988-90 it was 330/100,000 males and 293.8/100,000 females. The percentage of microscopically confirmed cases increased from 73% in 1963-67 to 91% in 1988-90. The age distribution changed (Table 1). The percentage of children diminished, while the percentage of the eldest age-group increased. The extent of disease at diagnosis also changed in both sexes (Table 2).

TABELA 2: Vsi raki. Bolniki vključeni v analizo po spolu, razširjenosti bolezni in obdobju opazovanja.

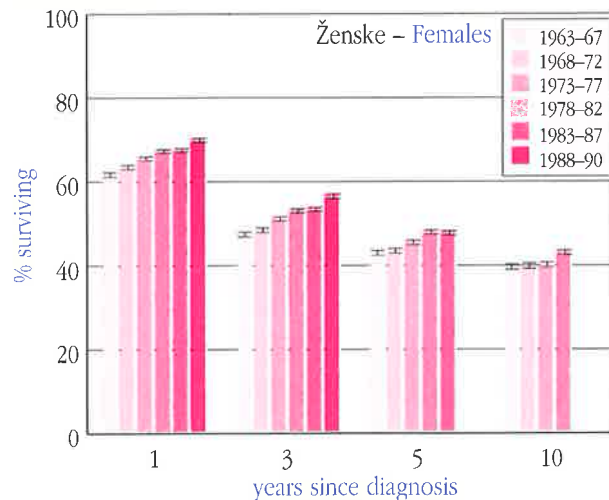
TABLE 2: All Sites. Patients included in the analysis by sex, extent of disease and period observation.

Period of observation	No.	Extent of disease (%)			
		Localized	Regional	Distant	Unknown
<b>Males</b>					
1963-67	7609	-	-	-	-
1968-72	8673	35.0	27.0	26.0	11.0
1973-77	10572	39.0	24.0	29.0	6.0
1978-82	12223	39.0	27.0	26.0	6.0
1983-87	13438	36.0	28.0	27.0	7.0
1988-90	8975	33.0	29.0	28.0	8.0
1963-90	61463	36.0	27.0	27.0	8.0
<b>Females</b>					
1963-67	7978	-	-	-	-
1968-72	8853	40.0	25.0	26.0	7.0
1973-77	10575	42.0	23.0	28.0	5.0
1978-82	11537	41.0	26.0	26.0	5.0
1983-87	12865	39.0	27.0	26.0	6.0
1988-90	8547	38.0	28.0	26.0	6.0
1963-90	60327	40.0	26.0	27.0	6.0

**SLIKA 2:** Relativno 1, 3, 5, in 10 letno preživetje s 95 % intervalom zaupanja vseh bolnikov z rakom zbolelih v letih 1963 – 90 po spolu in obdobjih opazovanja.



**FIGURE 2:** Relative 1, 3, 5, and 10 year survival with 95 % confidence interval of patients with all sites diagnosed in the period 1963 – 90 by sex and period of observation.



**TABELA 3:** Vsi raki. Opazovano in relativno preživetje po spolu in obdobju opazovanja.

**TABLE 3:** All Sites. Observed and relative survival by sex and period of observation.

Period of observation	Observed (%)								Relative (%)							
	Males				Females				Males				Females			
	Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis		Years since diagnosis			
	1	3	5	10	1	3	5	10	1	3	5	10	1	3	5	10
1963-67	43.01	25.69	20.03	13.16	59.58	43.31	37.02	28.75	44.91	29.45	25.48	22.56	61.11	46.90	42.55	39.16
1968-72	45.51	25.60	20.05	13.15	61.17	43.96	37.11	28.28	47.71	29.68	25.87	22.80	62.92	47.98	43.15	39.30
1973-77	46.12	27.12	21.29	13.78	63.04	46.11	38.38	28.07	48.32	31.34	27.30	23.57	64.94	50.55	44.99	39.68
1978-82	48.75	29.21	22.91	14.51	64.70	47.89	40.45	29.96	50.99	33.58	29.13	24.41	66.68	52.59	47.53	42.63
1983-87	49.03	29.91	23.35		64.64	47.90	39.80		51.30	34.41	29.71		66.77	52.96	47.36	
1988-90	51.40	32.08			67.08	50.78			53.66	36.65			69.22	56.01		

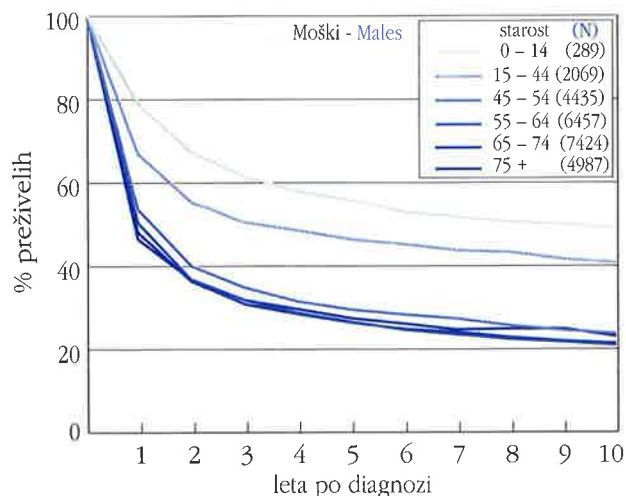
S slike 1 razberemo, da sta po treh letih od diagnoze krivulji pričakovanega in opazovanega preživetja za vse bolnike z rakom skoraj vzporedni. Po petih letih je verjetnost smrti vseh bolnikov z rakom skoraj enaka tisti v splošni populaciji.

Odstotek petletnega relativnega preživetja se je v opazovanem obdobju statistično značilno povečal za 5% (slika 2, tabela 3). Vseskozi je bil pri ženskah večji kot pri moških. V

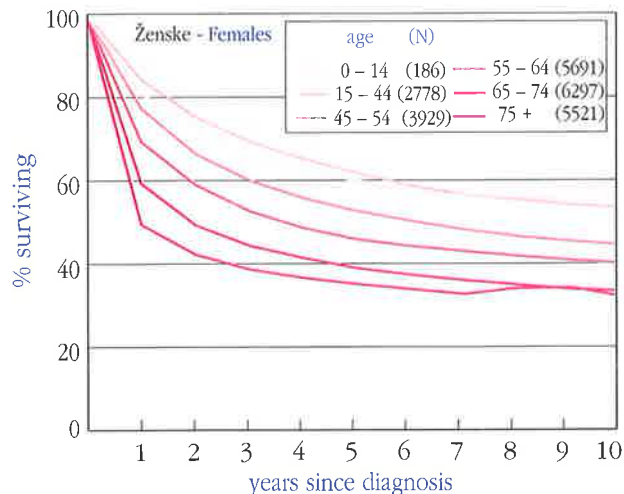
Figure 1 shows that after three years the curves of expected and observed survivals for all cancer patients together are almost parallel. After five years, the probability of death for all cancer patients together is almost the same as that for the general population.

In the observed period, the relative 5-year survival rate significantly increased by 5% (Figure 2, Table 3). Throughout

**SLIKA 3:** Relativno desetletno preživetje vseh bolnikov z rakom zbolelih v letih 1978 – 87 po spolu in starosti.



**FIGURE 3:** Relative ten-year survival of all sites patients diagnosed in the period 1978 – 87 by sex and age.



letih 1963-67 je znašal 25% pri moških in 42% pri ženskah, v letih 1983-87 pa 30% pri moških in 47% pri ženskah.

Preživetje je bilo glede na starost različno (slika 3). Pri moških je bil odstotek petletnega relativnega preživetja pri otrocih, starih 0-14 let 56%, pri mladih odraslih, starih 15-44 let 46%, pri najstarejših, starih 75 let in več pa komaj 28%. Pri ženskah istih starostnih skupin je bil 61%, 62% in 36%.

Pri razlagi trendov preživetja vseh bolnikov z rakom moramo biti previdni in upoštevati, da je odstotek preživetja odvisen od deleža posameznih rakov po spolu in starosti v opazovanem obdobju. Ženske zbole vajo v večji meri za prognozično ugodnejšimi raki kot moški.

Verjetnost preživetja posameznega rakavega bolnika je odvisna od tega, za katero rakavo boleznijo je zbolel, od naravnega poteka te bolezni in od vseh drugih številnih dejavnikov, ki smo jih navajali v uvodu in v razpravljanju o posameznih rakavih boleznih.

this period it was greater in females than in males; in the years 1963-67 the rates were 42% and 25% respectively, while in 1983-87 they were 47% and 30% respectively.

The survival by age was different (Figure 3). In males, the relative 5-year survival rates in children aged 0-14 years was 56%, in young adults aged 15-44 years it was 46%, while in the elderly aged 75 years or more, this rate was only 28%. In females of the same age groups these rates were 61%, 62% and 36% respectively.

When explaining the trends in survival of all cancer patients together, it should be taken into account that the survival rate depends on the proportion of individual cancers by sex, age and the period observed. In comparison with males, females are more often affected by prognostically favourable cancers.

The probability of survival of an individual cancer patient depends on the site and type of his/her cancer, the natural course of disease, and on several other factors that have been mentioned in the Introduction and discussed in relation to individual sites of cancer.

## ZAKLJUČEK

Incidenca rakavih bolezni v Sloveniji narašča zmerno, prav tako tudi umrljivost zaradi raka. Se je potemtakem preživetje bolnikov z rakom izboljšalo? Odgovor brez pričujoče analize je lahko zelo preprost in splošen: "ne".

Da bi se izognili napačnemu poenostavljanju, smo prikazali podatke, ki jih je osemindvajset let za bolnike z rakom iz vse Slovenije vestno zbiral in dopolnjeval naš Register.

Verjetnost preživetja posameznega bolnika je zelo odvisna od tega, za katero rakavo boleznijo je zbolel. Ob branju knjige ugotavljamo prognostično bolj in manj ugodne rakave bolezni. Glede na trend izboljšanja preživetja smo ugotovili tri večje skupine bolnikov.

V prvi skupini so tisti, pri katerih se je petletno preživetje statistično značilno izboljšalo za več kot 20%. To so bolniki s Hodgkinovo boleznijo, rakom mod, akutno limfoblastno levkemijo, rakom ščitnice in z ne-Hodgkinovimi malignimi limfomi. Med njimi so imeli v letih 1983-87 najboljše relativno petletno preživetje bolniki z rakom mod (več kot 80%), Hodgkinovo boleznijo (72% oz. 76%) in otroci z akutno limfoblastno levkemijo (60% oz. 69%).

V drugi skupini so bolniki, pri katerih smo registrirali statistično značilno izboljšanje petletnega preživetja za 5% do okoli 10%. To so bolniki z nekaterimi najbolj pogostimi raki v Sloveniji: rak dojke, želodčni rak, rak debelega črevesa, rak prostate; poleg njih pa še rak grla, mehurja, ledvic in kronična limfatična levkemija. Med njimi so imeli v letih 1983-87 najdaljše relativno petletno preživetje bolnice z rakom dojke (62%), bolniki z rakom grla (51%) in mehurja (50%).

V tretji skupini so bolniki, pri katerih se je petletno preživetje le nakazano izboljšalo ali pa se sploh ni izboljšalo, kar pa ne pomeni, da je bilo pri vseh tudi kratko. To so bolniki s pljučnim rakom, rakom žrela in ustne votline, rakom danke, jeter, žolčnika in trebušne slinavke, bolnice z rakom materničnega telesa, materničnega vratu in jajčnikov, bolniki z nelimfoblastno akutno in kronično mieloično levkemijo pa tudi tisti s kožnim rakom. Med njimi so imeli v letih 1983-87 najdaljše petletno relativno preživetje bolniki s kožnim rakom (95%), bolnice z rakom materničnega telesa (77%) in z rakom materničnega vratu (59%). Med bolniki s kratkim preživetjem so tudi bolniki s pljučnim rakom ter raki ustne votline in žrela. Teh bolnikov, ki imajo kratko preživetje, pa bi bilo lahko precej manj, saj zbolevalo za raki, ki jih danes z zdravim načinom življenja (opustitev kajenja in pretiranega pitja alkoholnih pijač) v veliki meri že lahko preprečujemo.

Podatki o preživetju bolnikov z rakom so kompleksna ocena bremena raka v opazovani populaciji. Na preživetje bolnikov z rakom vplivajo številni dejavniki, ki so povezani tako z bolniki samimi: starost, spol, telesna zmogljivost in spremljajoče bolezni, kot z rakom: razširjenost bolezni v času ugotovitve diagnoze, histološka vrsta in način zdravljenja. Pravočasna diagnoza in sodobno zdravljenje pomembno vplivata na preživetje v dani populaciji le, če sta dosegljiva večini bolnikov.

## CONCLUSION

Cancer incidence in Slovenia is moderately increasing, and so too is cancer mortality. Could this mean that there has been no improvement in the survival of cancer patients? Had not it been for the present analysis, the answer to this question might be a very simple and general "no".

We have decided to present the data that have been collected and completed with great care by the Cancer Registry of Slovenia over a period of 28 years, in order to avoid jumping to conclusions, or making misinterpretation of the data in question.

The probability of survival of an individual cancer patient largely depends on the site and histological type of his/her cancer. From our analysis it becomes evident that some cancers are more prognostically favourable while others are less so. With respect to the trends in improvement, the following three larger groups of patients were identified:

The first group consists of those whose five-year survival has significantly improved by more than 20%. These are the patients with Hodgkin's disease, testicular cancer, acute lymphoblastic leukemia, thyroid carcinoma and non-Hodgkin's lymphomas. Among these, the best five-year relative survival rates for the period 1983-87 were noted in patients with testicular cancer (over 80%), Hodgkin's lymphomas (72% and 76% respectively), and in children with acute lymphoblastic leukemia (60%-69%).

The second group consists of patients with a 5%-10% significant increase in five-year survival. These are the patients with some of the most frequent cancers in Slovenia, such as breast cancer, gastric cancer, cancer of the colon and prostatic cancer; the same group also includes cancers of the larynx, bladder and kidneys, and chronic lymphatic leukemia. Among these, the highest relative five-year survival rates for the period 1983-87 were noted in patients with cancers of the breast (62%), larynx (51%) and bladder (50%).

The third group is composed of patients whose five-year survival has been only slightly improved or has remained stable, which, however, does not mean that all these patients also had short survivals. These are the patients with cancers of the lung, pharynx and oral cavity, cancers of the rectum, liver, gall-bladder and pancreas, as well as female patients with cancers of the corpus uteri, cervix uteri and ovaries, patients with non-lymphoblastic acute and chronic myeloid leukemias, and those with skin cancer. Among these, the highest relative five-year survival rates for the period 1983-87 were observed in patients with skin cancer (95%), cancer of the corpus uteri (77%) and cervical cancer (59%). Very low survival rates were noted in patients with cancers of the lung, oral cavity and pharynx. These patients could be less numerous, considering the fact that their cancer can be to a large extent prevented by a healthy life style without smoking and alcohol abuse.

The presented data on cancer patients' survival represent a complex assessment of cancer burden in the population observed. The survival of cancer patients is influenced by numerous factors. These are: age, sex, patient's performance



Naše ugotovitve so končen izid vseh teh prepletajočih se dejavnikov v zadnjih 30. letih v Sloveniji. Da bi bili primerljivi z drugimi deželami, smo jih prikazali z relativnim odstotkom preživetja, ki upošteva tudi pričakovano trajanje življenja v Sloveniji v opazovanem obdobju.

O tem, zakaj so trendi preživetja bolnikov z rakom v Sloveniji takšni in ne drugačni, so razpravljali kolegi kliniki, ki se z njimi srečujejo na Onkološkem inštitutu, na Pediatrični in na Hematološki kliniki Kliničnega centra v Ljubljani že vrsto let. Izrazili so marsikatero vzpodbudno, a tudi kritično misel z željo, da se preživetje rakavih bolnikov v Sloveniji približa najboljšemu v Evropi (27).

Da bi nakazali, kje smo v primerjavi z Dansko in Škotsko, ki sta izdali podobni knjigi (13,15) za ista obdobja, smo pri vsakem raku navedli še trende relativnega preživetja pri njih. O razlikah nismo razpravljali, ker je vzrokov zanje lahko mnogo in bi razpravljanje o njih preseglo namen te knjige. Zanimivo pa bo primerjati naše ugotovitve z izsledki študije EURO CARE, ki obravnava preživetje bolnikov z rakom v bolj in manj razvitih deželah in regijah Evropske skupnosti in v nekaterih drugih izbranih evropskih državah (27).

status, concomitant diseases, extent of the disease at the time of diagnosis, histological type, and the treatment modality. Timely diagnosis and modern treatment facilities can significantly influence the survival only if they are available to the majority of patients.

Our results can be regarded as a final outcome of all the coexisting factors that have been influencing the survival of cancer patients in Slovenia in the past 30 years. In order to render our results comparable with those obtained in other countries, they were presented as relative rates which also take into account the expected survival in Slovenia.

The reasons for the trends in cancer patients' survival in Slovenia being as they are, and not different, have been discussed by our colleagues, clinicians from the Institute of Oncology and from the Departments of Pediatrics and Hematology of the University Medical Center in Ljubljana. Many encouraging, as well as critical suggestions have been made in an attempt to help increase the cancer patients' survival in Slovenia to a level approaching the highest rates achieved elsewhere in Europe (27).

In order to show where our position lies in comparison with Denmark and Scotland, - where similar studies covering the same time-periods have been published (13, 15) - our data on each cancer were furnished with information on the relative survival trends in the two countries mentioned. The reasons for the differences being manifold, we have not attempted to discuss them since this would go far beyond the scope of this book. Nevertheless, it would be interesting to compare our findings with those of EURO CARE study, analysing the survival of cancer patients in more and less developed countries and regions of the European Community, as well as in some other selected European countries (27).

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