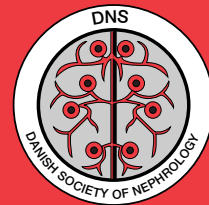


DANSK NEFROLOGISK SELSKAB

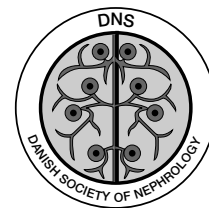


*Landsregister for patienter
i aktiv behandling for
kronisk nyresvigt
Rapport for Danmark 2001*

*Danish National Registry
Report on Dialysis and
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The Danish Society of Nephrology

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Forord

Aktiv behandling af kronisk nyresvigt omfatter dialyse og nyretransplantation. Formålet med Dansk Nefrologisk Selskabs Landsregister (DNSL) er at indhente relevante kliniske og para-kliniske oplysninger om disse patienter og videregive en vurdering heraf. I 1993 udkom den første rapport, som omfattede perioden fra 1/1-90 til 1/1-93. Siden er rapporteringen foregået årligt.

Registrets officielle navn er: *Den landsdækkende kliniske database for patienter i aktiv behandling for kronisk nyresvigt*. Registret ejes af og er hjemmehørende i Københavns Amt.

DNS er ansvarlig for indsamling af talmaterialet og behandling af de indsamlede data. Dette organiseres af et *registerudvalg* nedsat af DNS. Formanden er den til enhver tid siddende formand for DNS. Fast medlem af udvalget er den registeransvarlige, som formelt har ansvaret for datasikkerhed over for såvel DNS som Københavns Amt. Udvalgets øvrige medlemmer består af læger med speciel interesse for registrering og epidemiologisk forskning. Ved et møde i DNS registerudvalg den 13/11-2002 endes man om en øget decentralisering af den kliniske databases opgaver. DNS samarbejder med *Uni-C* om tekniske og statistiske problemer.

Udvalgets nuværende medlemmer er:

Overlæge *Bo Feldt-Rasmussen*. Formand for registerudvalget. Er ansvarlig for dets funktion og tilfredsstillende relationer til DNS bestyrelse og medlemmer.

Overlæge *Tom Buur* med speciel interesse for registrering af hæmodialyse.

Overlæge *James Heaf* med speciel interesse for P-dialyse.

Overlæge *Hans Løkkegaard*. Registeransvarlig og ansvarlig for drift, kontakt med ansvarlige myndigheder, kontakt til andre registre (Scandiatransplant, Nordiske uræmiregistre, Cancerregister, ERA-EDTA), Datakonsulenter (Uni-C) og endelig udformning af den årlige rapport.

Overlæge *Niels Løkkegaard* med speciel interesse for Hæmodialyse og relationer til Cancerregistret.

Overlæge *Melvin Madsen* med speciel interesse for nyretransplantationer.

Modifikationer i forbindelse med denne udvidelse vil først vise sig i næste udgave af DNSL (årsmødet 2003).

Den nye udgave af den landsdækkende kliniske database er et Windows-baseret program med de tekniske fordele, den moderne teknik muliggør. Dette program anvendes i år for anden gang. Indføring af ny teknik skaber ofte problemer og i de sidste par år har vi måttet igennem en periode med tilretning af tekniske problemer. Dette er nu overstået. En varm tak til *Nyreforeningen* for økonomisk støtte til dette arbejde.

Vi har bevaret den oprindelige organisation med indtastning af data på de enkelte centre og årlig tilførsel af data centralt via diskette. Den tekniske udformning af databasen tillader anvendelse af Internettet og Uni-C har foreslået en løsning, som vil tillade direkte indtastning på nettet og som også tillader, at data overføres fra andre eksisterende databaser på afdelingerne. Registerudvalget drøfter Uni-C's forslag og vender tilbage til problemet ved DNS næste årsmøde.

Registret indeholder nu data på 7972 patienter, som 1/1 – 90 enten var eller siden er påbegyndt behandling. Der ydes på de nefrologiske afdelinger en betydelig indsats med indtastning af data og der er god grund til at takke de mange, som har været involveret i dette betydelige arbejde.

I 1997 lykkedes det at etablere samarbejde med *Scandiatransplant* og *Cancerregistret*. Der er siden udvekslet data mellem DNSL og nævnte registre. I 1997 muliggjorde dataudvekslingen en analyse af vævstypernes betydning for 8 års nyretransplantation. I 1998 resulterede samarbejdet med Cancerregistret i den første analyse af cancerudviklingen i Danmark vedrørende denne patientgruppe. Samarbejdet med de to registre er planlagt at fortsætte. Et samarbejde mellem de *nordiske uræmiregistre* er under opbygning. Endelig fortsætter samarbejdet med *ERA-EDTA registret*, som hvert år modtager data via DNSL.

Dette års udgave indeholder igen en række parakliniske parametre beregnet til at vurdere kvaliteten af forskellige terapeutiske tiltag. Indtil videre er antallet af parakliniske parametre beskedent, et forhold som næppe ændres før den moderne teknik tillader automatisk overførsel af laboratorieresultater fra sygehusenes EDB-systemer - en udvikling, som må formodes at accelerere de nærmeste år. Disse parametre vil med tiden være værdifulde værktøjer til at sikre en ensartet god behandlingskvalitet i Danmark.

Der er i år foretaget en samkøring af registrets data med CPR-registret. Dette har afsløret en manglende registrering af patientdød i 317 tilfælde over en 12årig periode. Umiddelbart betyder det, at prævalensen for alle

årene har måttet ændres. Dette har ikke ændret tidligere konklusioner, men fremover vil registrets dødsstatistik hvert år blive kontrolleret ved hjælp af CPR-registret.

November 2002

Hans Løkkegaard
Registeransvarlig
National koordinator

Preface

The Danish Registry on Regular Dialysis and Transplantation was founded in 1990, and since then all patients actively treated for end-stage renal disease (ESRD) have been registered – now including 7972 patients. Data is input using identical software programs in all renal centres, and once yearly data are sent to a central database. Here the material is checked for errors, and appropriate corrections are made in dialogue with the reporting centres. Finally, a national report is prepared, and data are transferred to the registry maintained by the European Dialysis and Transplant Association (EDTA), the Danish Cancer Registry and Scandiatransplant.

Data exchange with the Danish Cancer Registry and Scandiatransplant was started in 1997. In 1998 this collaboration resulted in a report concerning the influence of tissue typing on graft survival in Denmark since 1990. Moreover, in 1999 the first report on development of cancer in Danish ESRD patients was published.

The registry was founded and is maintained by the Danish Society of Nephrology (DNS). Reports are published annually.

November 2002

Hans Løkkegaard
National Co-ordinator

Indholdsfortegnelse

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Fig. 1. Renal centers in Denmark 2001

Renal Centres and Population in Denmark

Transpl. Centre	County	Dialysis center	Population
Skejby	Århus	Skejby	637122
	Nordjylland	Aalborg	494153
	Ringkøbing	Holstebro	272857
	Viborg	Viborg	233186
	Total Skejby		1637318
Odense	Fyn	Odense	471974
	Ribe	Esbjerg	224345
	Sønderjylland	Sønderborg	253482
	Vejle	Fredericia	347542
	Total Odense		1307343
Herlev	Københavns amt	Herlev	
	Total Herlev		613444
Rigshospitalet RH	Bornholm	Rønne	44337
	Frederiksberg	RH	90327
	Frederiksborg	Hillerød	365306
	Færøerne	RH	43751
	Grønland	RH	56124
	København	RH	495699
	Roskilde	Roskilde	231559
	Storstrøm	Nykøbing F	259106
	Vestsjælland	Holbæk	295086
	Total RH		1881295
Total population 01.01.2000			5439400

Table 1. Population and renal centres in Denmark as of 010102. Statistical Yearbook 2000

Prevalence of ESRD 1991 – 2001

Patients on dialysis or with a functioning graft

Treatment	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
CAPD	336	329	362	366	372	359	384	380	412	363	351
APD	12	10	16	29	33	45	66	78	112	161	246
Center-IPD	35	27	29	18	18	13	10	8	8	8	4
PD + HD									2	7	5
Home-IPD	1	2	1	0	5	15	12	11	6	3	1
Center-HD	608	623	711	764	854	936	1043	1165	1280	1438	1562
Lim. Care	37	38	42	43	52	62	57	68	64	73	72
Home-HD	21	17	16	17	15	13	9	7	9	11	14
In dialysis	1050	1046	1177	1237	1349	1443	1581	1717	1895	2064	2255
<i>Home</i>	370	358	395	412	425	432	471	476	543	545	617
PD	349	341	379	395	410	419	462	469	532	534	603
HD	21	17	16	17	15	13	9	7	9	11	14
PD+HD									2	6	5
<i>Center</i>	680	688	782	825	924	1011	1110	1241	1352	1519	1638
Transpl.	927	1005	1073	1137	1154	1218	1230	1257	1308	1346	1387
In treatment	1977	2051	2250	2374	2503	2661	2811	2974	3203	3410	3642

Table 2. Treatment modalities for ESRD 1991 - 2001. The number of patients on dialysis has increased steadily from 1991 through 2001. In 2001 the prevalence in Denmark of patients on dialysis and with a functioning renal graft was 462 and 274 per million inhabitants, respectively. This year our registration has been linked together with the national CPR-registration. This revealed that 317 deaths were not registered during a 12-year period. Therefore *the data in this table and figures derived from this have been corrected as compared with previous years.*

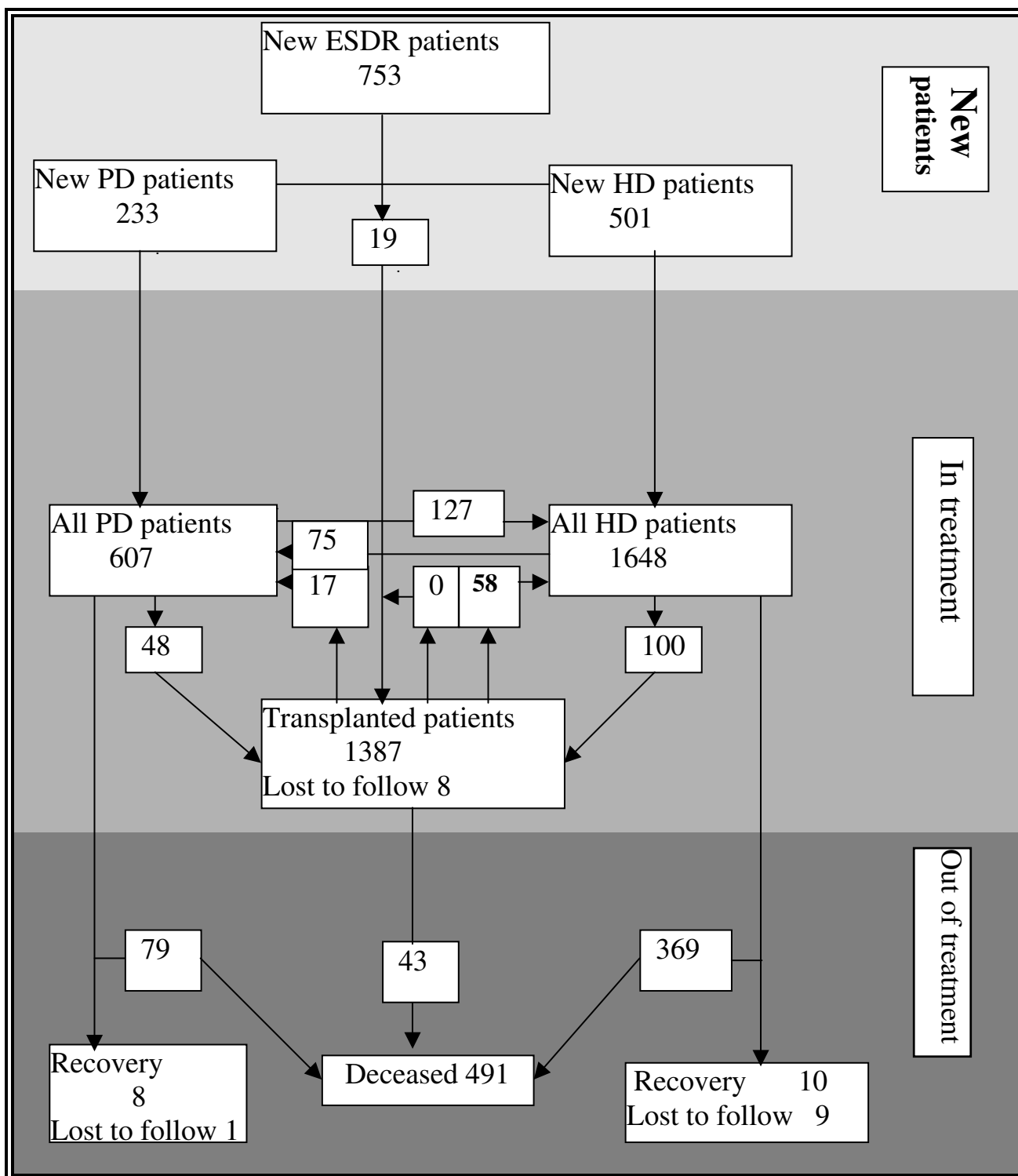


Fig. 2. Changes in the number of patients treated for ESRD during 2001 – status as of 31.12.01. 753 patients started treatment (HD, PD, RAT) in 2001. At the end of the year 2255 patients were on dialysis and 1387 had a functioning renal allograft.

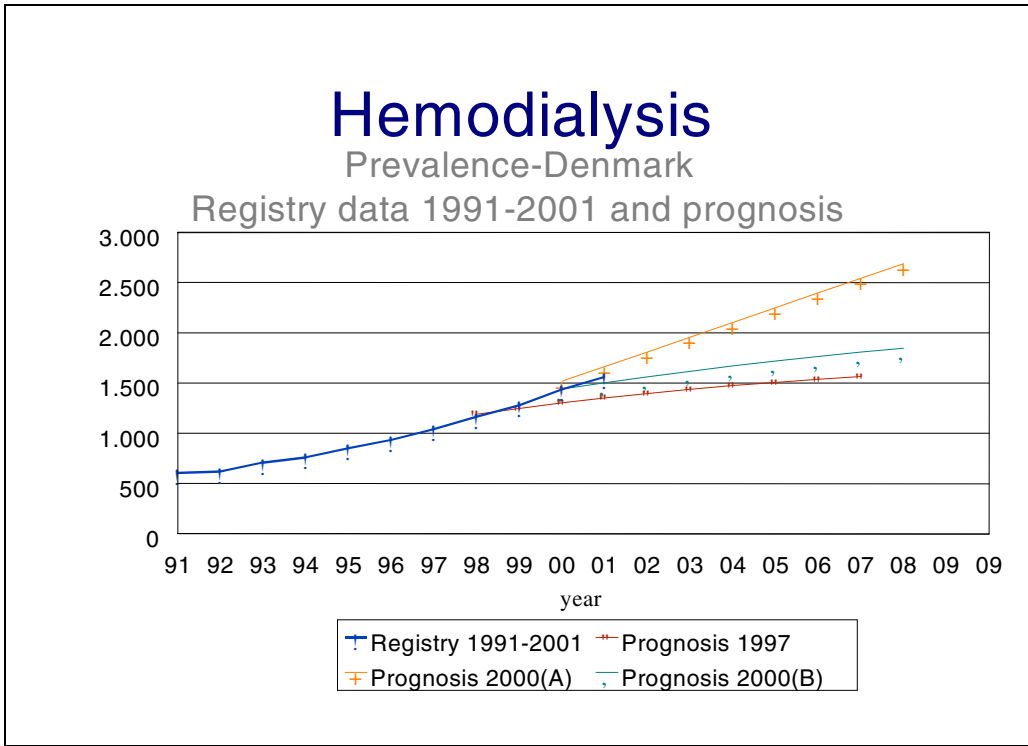


Fig. 3

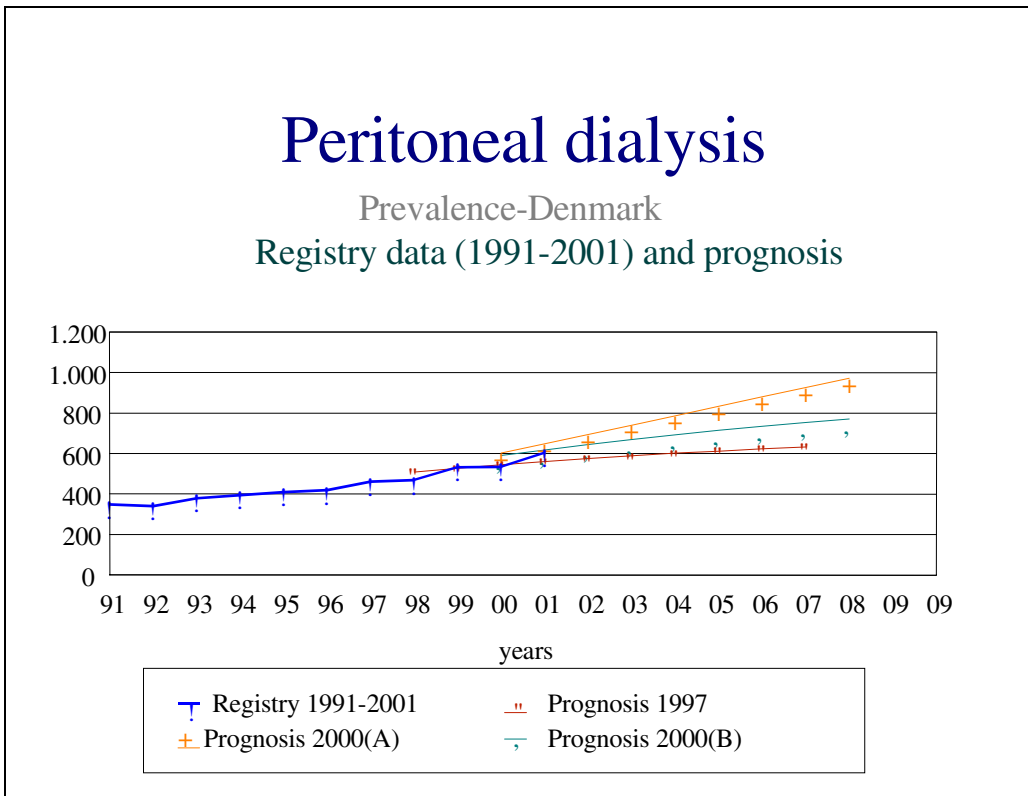


Fig. 4

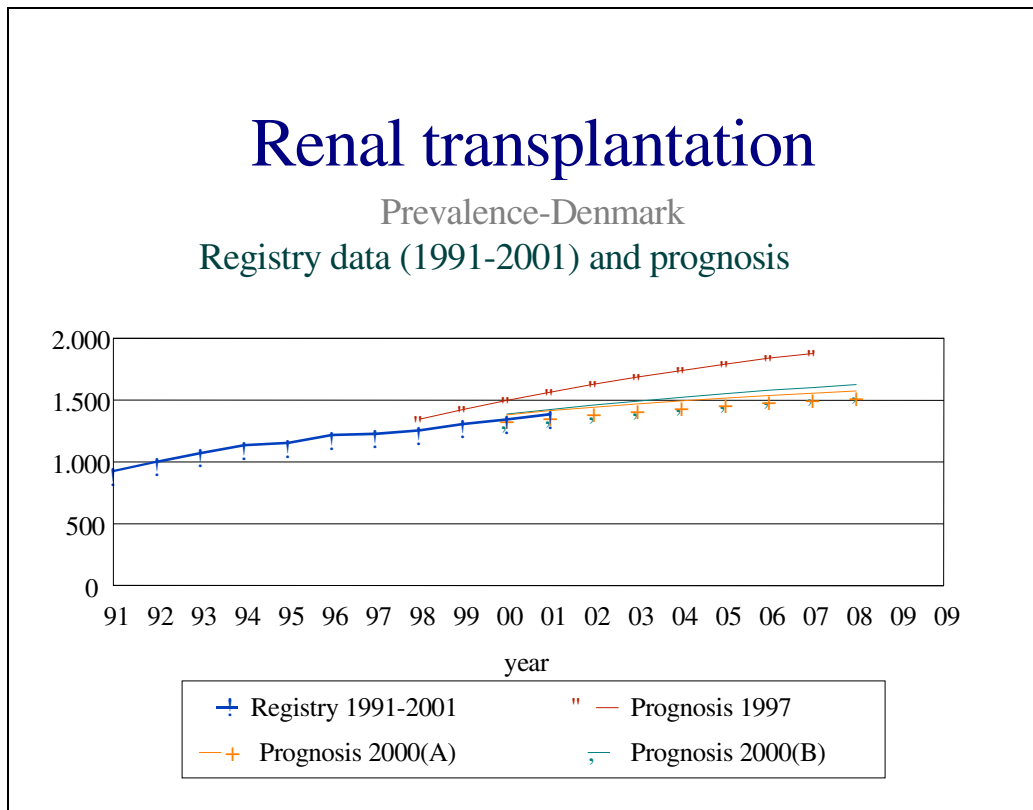


Fig. 5

Fig. 3, 4 and 5. Prognostic calculations concerning the number of hemodialysis- (HD) peritoneal-dialysis- (PD) and transplanted (TX) patients. The calculations are based on data from 1990 – 99 (Vestergaard P., see scientific contribution (4,6,7)).

Three different prognoses are shown:

- a. The first calculation was made in 1997 and shows the prognosis from 1998 to 2007. This calculation was based on the assumption that the prognosis could be calculated from average values of earlier data (1990-97). When this assumption was questioned, two new models were introduced.
- b. Prognosis 2000A assumes an increasing incidence based on average values from the last three years and mortality from the same period.
- c. Prognosis 2000B is based on average figures from the last three years without further increase in incidence and change in mortality.

For further discussion see Peter Vestergaard's report (7). The incidence and mortality rate is difficult to predict. Repeated calculations are necessary in the future.

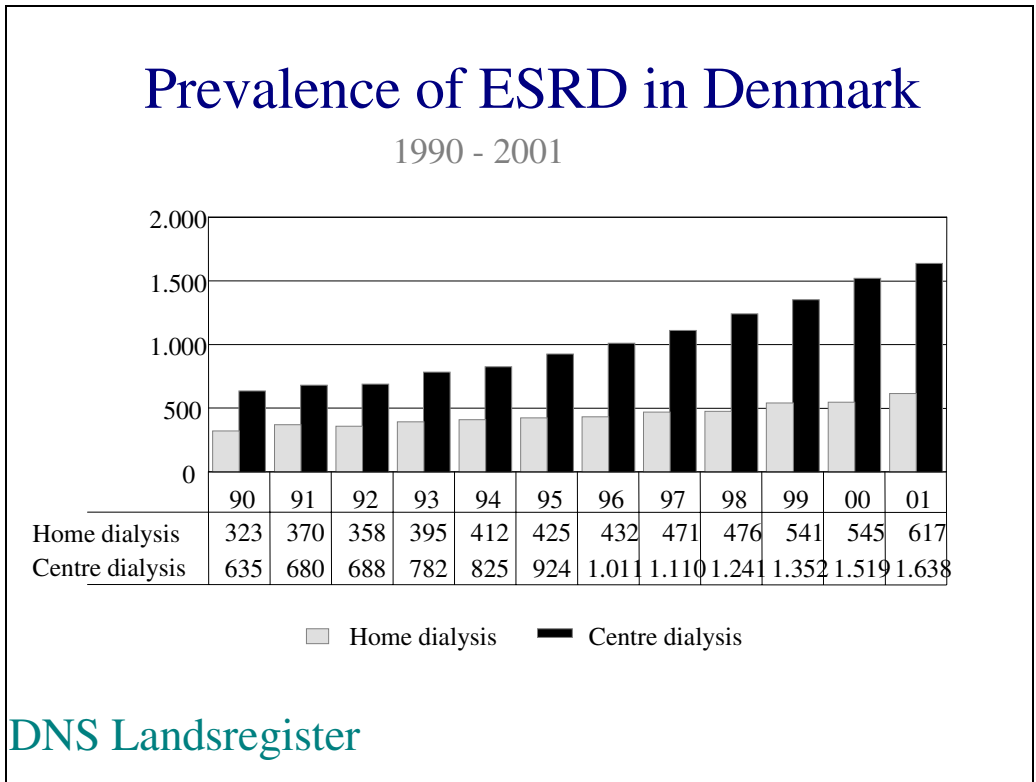


Fig. 6

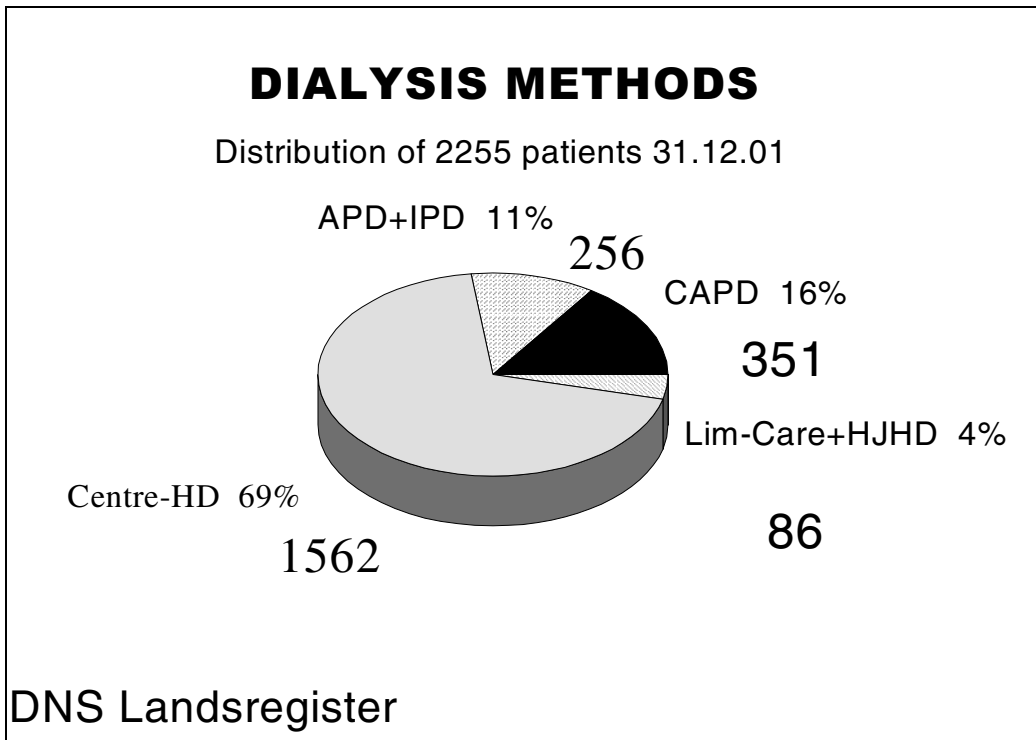


Fig. 7

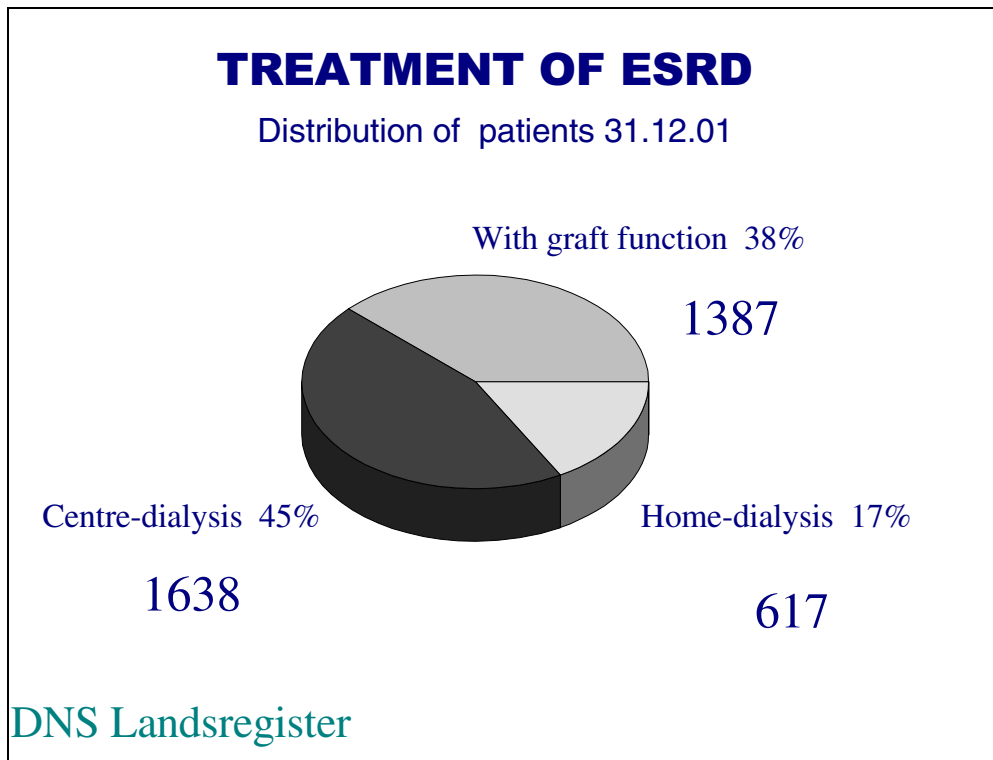


Fig. 8

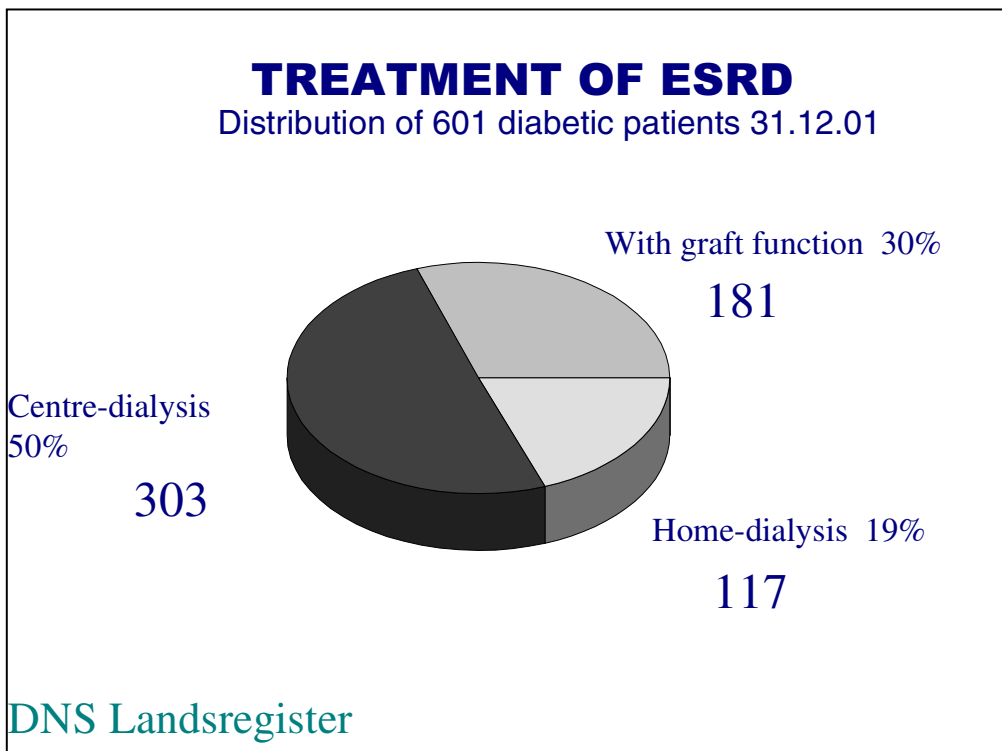


Fig. 9

Incidence of ESRD

Centre	1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001	
	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.
Esbjerg	10	46	6	27	15	68	25	114	13	59	13	57	17	77	19	85	17	76	32	143	33	147	36	160
Fredericia	14	42	21	63	17	51	26	79	25	75	29	86	26	77	31	91	33	96	42	122	56	162	43	123
Herlev	45	75	39	65	36	60	39	65	50	83	40	66	54	89	66	108	62	102	75	123	47	77	67	109
Hillerød																							41	112
Holbæk					1	3			2	7	2	7	22	76	35	120	24	82	24	82	40	137	40	136
Holstebro	10	37	11	37	13	48	19	71	21	78	28	104	28	104	17	62	24	88	29	107	30	110	41	150
Hvidovre	33	60	48	87	39	71	59	107	43	78	49	88	68	121										
Odense	45	98	52	73	39	55	42	59	55	118	55	118	31	66	51	108	43	91	59	125	47	100	67	142
Rigshosp.	70	56	87	69	110	87	124	109	115	153	119	114	103	136	97	90	177	137	183	141	218	168	142	150
Roskilde							12	54	15	68	13	58	12	57	17	75	37	162	21	92	23	101	28	121
Rønne															1	22	6	136	5	111	2	45	1	23
Skejby	54	90	49	81	39	65	66	110	47	77	73	118	45	73	74	118	73	117	79	125	103	163	114	179
Sønderbg.											14	56	28	111	28	110	24	95	28	110	18	71	30	118
Viborg	19	83	18	78	13	56	26	113	26	113	25	109	19	85	25	107	19	82	22	94	22	94	32	137
Ålborg	30	62	34	69	38	77	54	111	32	66	48	98	56	114	41	85	48	98	54	110	60	122	71	144
Denmark	330	63	365	70	360	69	492	94	445	86	508	97	510	98	539	100	587	104	653	121	699	129	753	138

Table 3. New patients (number per million per year) 1990 – 2001 in the renal centres. The incidence in Denmark was rather stable from 1995 - 98 - about 100. In 1999 the incidence has increased to 121, in 2000 to 129 and in 2001 to 138. Incidence in 2001 in Finland = 88, in Norway = 94 and Sweden = 124.

Age distribution 1990 - 2001

Year	00-19	20-29	30-39	40-49	50-59	60-69	70-79	>=80	%>=60
1990	2	11	7	24	18	25	12	0	37
1991	3	7	9	17	23	25	16	0	41
1992	5	5	13	16	24	21	15	1	37
1993	3	5	9	17	21	26	19	1	46
1994	2	7	14	14	20	24	18	1	43
1995	3	8	9	16	17	26	20	1	47
1996	2	6	9	13	18	26	24	2	52
1997	2	5	10	12	22	24	23	2	49
1998	3	4	7	14	20	22	26	4	52
1999	1	4	9	12	17	27	24	6	57
2000	2	3	8	12	20	24	24	7	55
2001	2	3	5	9	19	26	27	8	61
Population	4	16	14	15	11	9	7	5	21

Table 4. Percentage age distribution of patients starting treatment for ESRD 1990-2001
For comparison the age distribution of the Danish population is also indicated.

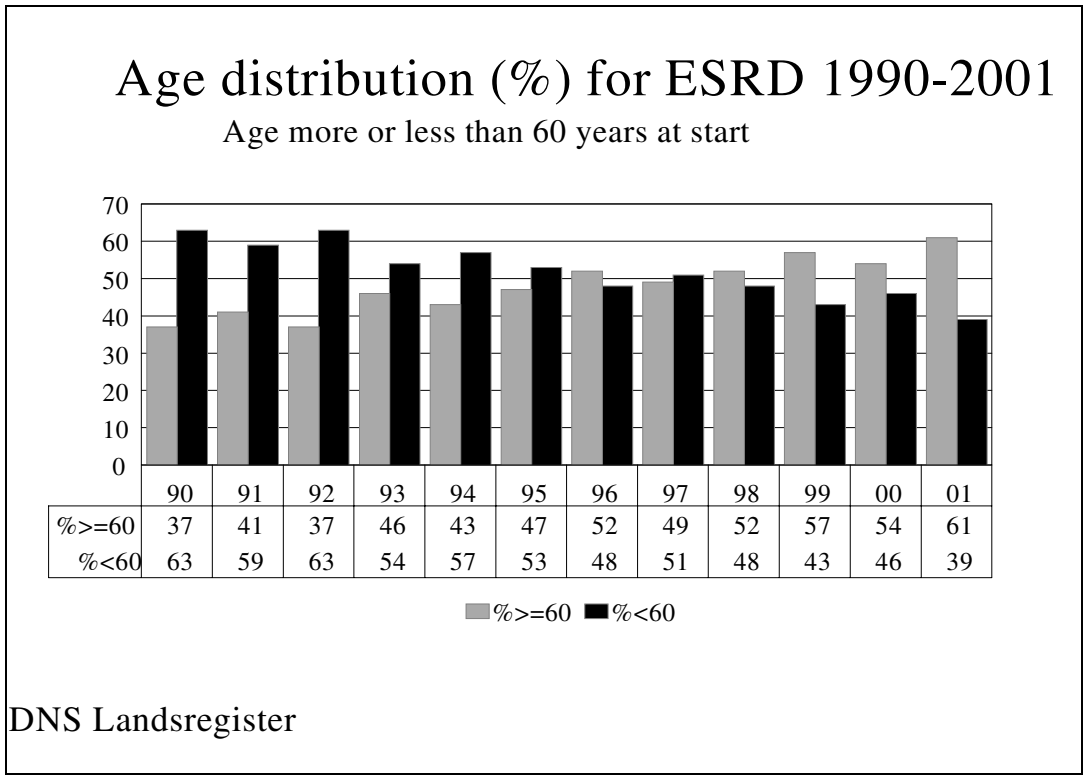


Fig. 10

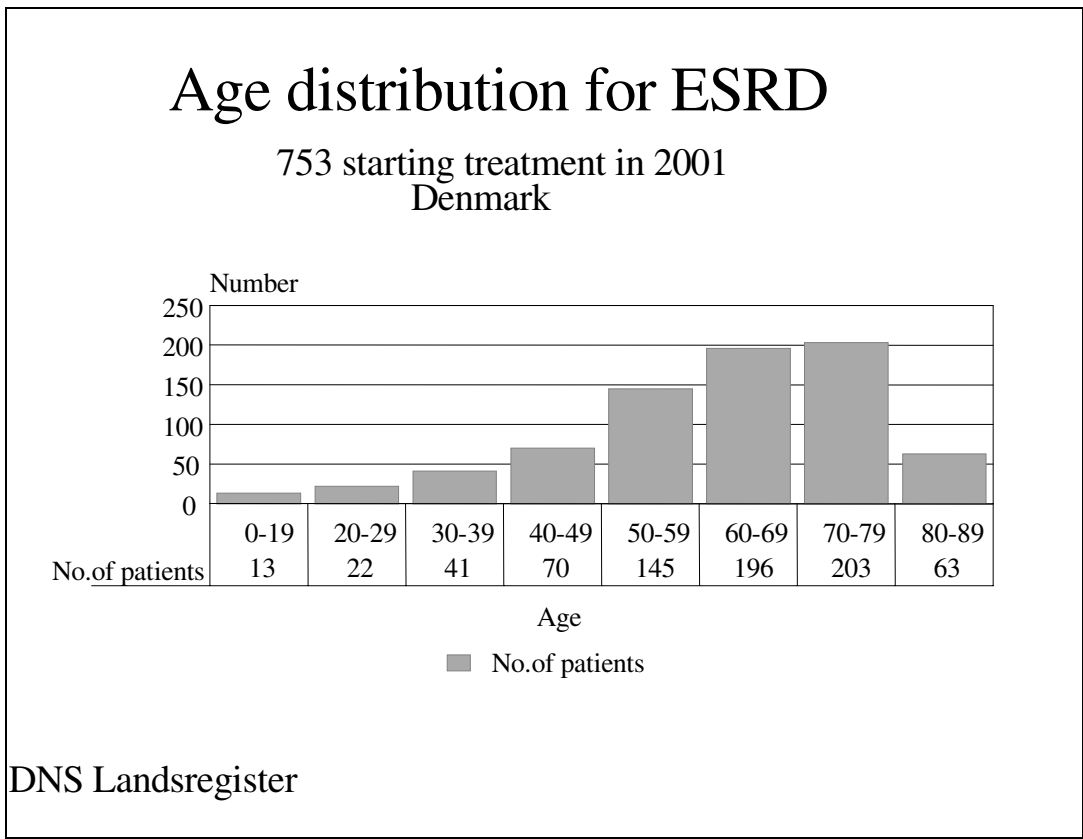


Fig. 11

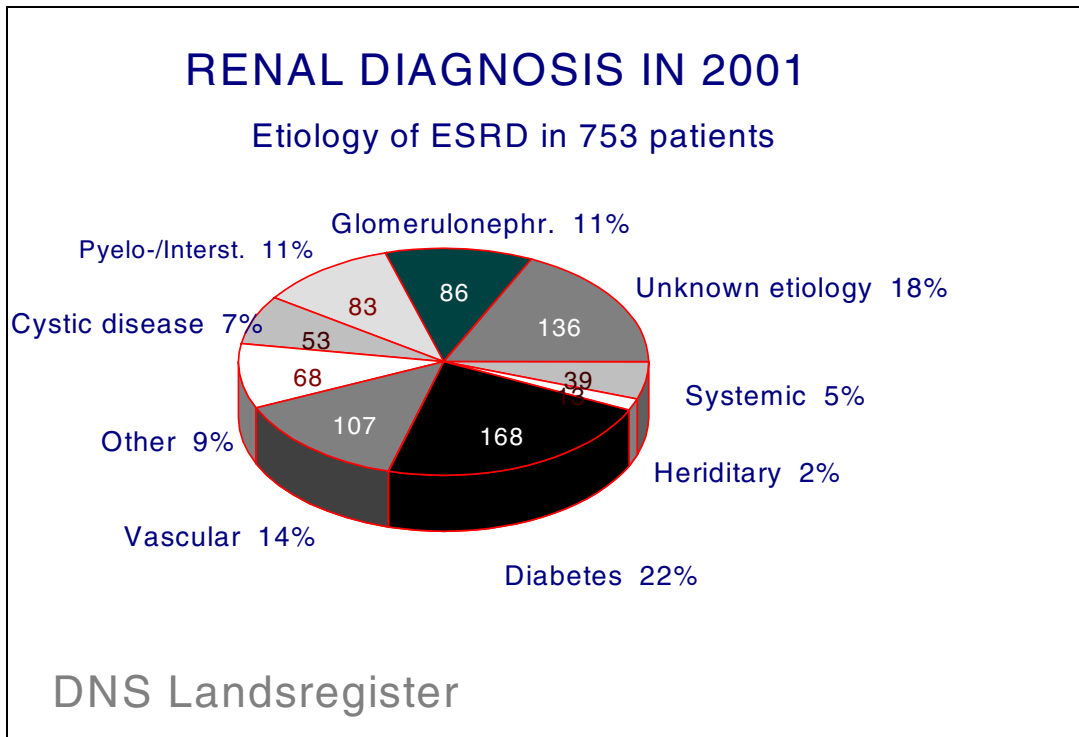
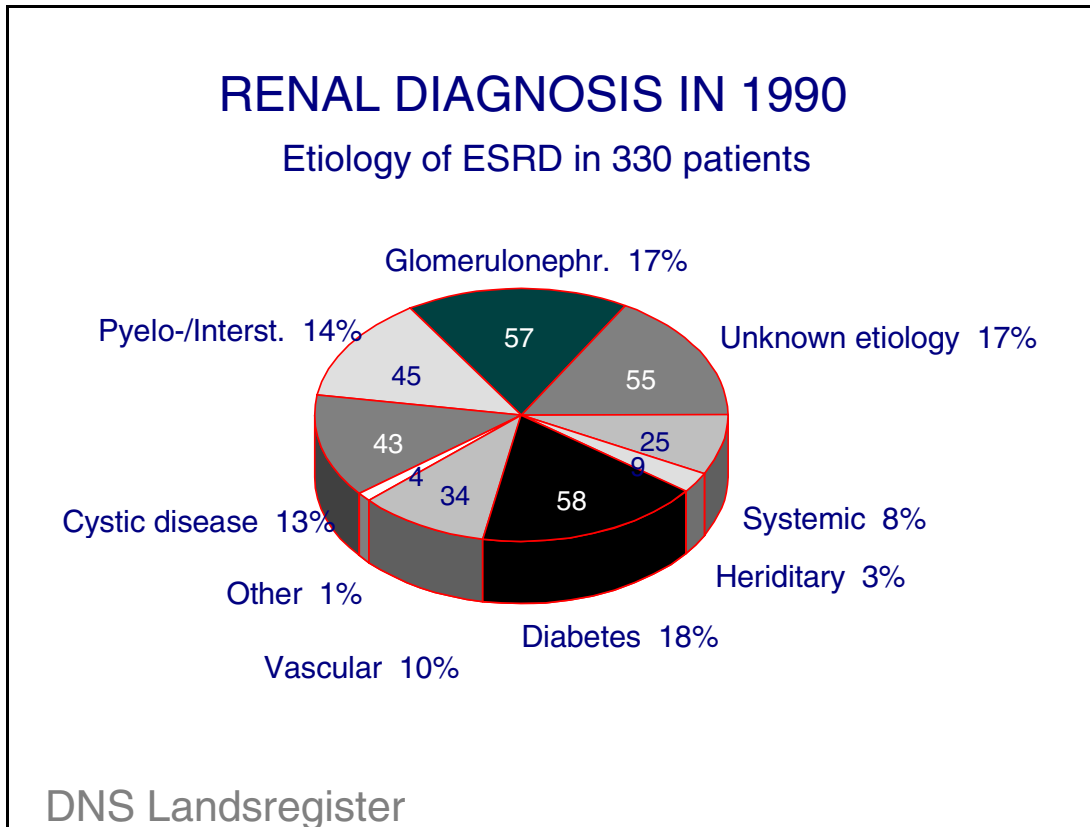


Fig. 12

Renal Diagnoses 2001

Age	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	All
Renal diagnosis									
ESRD, unknown causes	0	3	6	6	19	33	49	20	136
Glomerulonephritis	4	7	11	15	18	22	9	0	86
Pyelo/interst. Nephritis	2	3	3	8	8	24	30	5	83
Cystic renal disease	0	0	5	6	18	13	6	5	53
Alport disease	1	1	0	0	0	0	0	0	2
Other hereditary disease	3	1	1	1	0	0	0	0	6
Renal hypoplasia	2	1	2	0	0	0	0	0	5
Renal vascular disease	1	2	2	5	23	24	30	8	95
Renal vasculitis	0	0	0	0	0	7	3	2	12
Diabetes (IDDM)	0	3	7	18	25	15	13	4	85
Diabetes (NIDDM)	0	0	1	0	14	32	29	7	83
Systemic disease	0	0	3	3	9	10	11	3	39
Other renal diseases	0	1	0	8	11	16	23	9	68
Sum	13	22	41	70	145	196	203	63	753

Table 5. Renal diagnosis in patients starting treatment for ESRD in 2001. The patients are stratified according to age.

Renal Diagnoses 1990 - 2001

Renal diagnosis	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	SUM
ESRD, unknown causes	55	61	62	81	76	82	103	110	105	131	134	136	1136
Glomerulonephritis	57	68	67	81	69	82	74	72	85	99	82	86	922
Pyelo/interst. Nephritis	45	59	57	76	59	67	58	72	81	78	92	83	827
Cystic renal disease	43	33	30	47	34	43	37	40	45	47	44	53	496
Alport disease	4	3	2	2	2	1	4	2	1	0	3	2	26
Other hereditary disease	4	3	2	4	1	6	2	4	4	3	2	6	41
Renal hypoplasia	1	6	1	6	4	4	1	3	6	3	3	5	43
Renal vascular disease	34	44	36	57	60	68	58	58	79	85	95	95	769
Renal vasculitis	5	3	0	6	10	13	17	15	12	16	16	12	125
Diabetes (IDDM)	52	53	63	76	69	73	73	65	79	95	77	85	860
Diabetes (NIDDM)	6	13	9	23	24	40	41	43	37	50	73	83	442
Systemic disease	20	13	26	18	24	22	33	34	32	36	43	39	340
Other renal diseases	4	6	5	15	13	7	9	21	21	10	35	68	214
Sum	330	365	360	492	445	508	510	539	587	653	699	753	6238

Table 6. Renal diagnoses in patients starting treatment 1990 - 2001.

Measures of quality of dialysis

		Department	KT/V for HD patients	
			Mean	No.of cases
Hemodialysis and KT/V	Center- HD	Rigshospitalet	1.4	118
		Herlev	1.3	105
		Hillerød	1.4	67
		Roskilde	1.4	45
		Holbæk	1.3	34
		Nykøb.Falster	1.4	56
		Rønne	1.4	18
		Odense	1.3	134
		Sønderborg	1.2	63
		Esbjerg	1.5	54
		Fredericia	1.4	99
		Holstebro	1.3	64
		Skejby	1.3	83
		Viborg	1.4	50
		Aalborg	1.5	102
	Denmark	1.4	1092	
	Limited Care	Rigshospitalet	1.4	27
		Herlev	1.6	12
		Aalborg	1.5	23
		Denmark	1.4	62

Table 7. KT/V measurements in hemodialysis patients treated 3 times a week. The table shows average values for Denmark as a whole and for the 15 nephrological centers. No major differences between the centers. Results from Limited-care patients and Center-hemodialysis patients are separated. Eight patients were treated once a week, 85 two, 1 four and 1 five times a week. Dialysis 3 times a week is by far the most common treatment of hemodialysis patients in Denmark.

		Department	KT/V for PD patients	
			Mean	No.of cases
Peritoneal dialysis and KT/V	CAPD	Rigshospitalet	2.5	35
		Herlev	2.0	29
		Hillerød	2.2	28
		Roskilde	2.4	17
		Holbæk	3.2	4
		Odense	2.4	31
		Sønderborg	2.5	11
		Esbjerg	2.2	26
		Fredericia	2.4	21
		Holstebro	2.5	13
		Skejby	2.3	40
		Viborg	2.2	7
		Aalborg	2.4	13
		Denmark	2.3	275
		ADP	Rigshospitalet	2.6
	Herlev		2.1	10
	Hillerød		2.1	13
	Roskilde		2.2	14
	Holbæk		3.1	4
	Odense		2.2	15
	Sønderborg		2.4	16
	Esbjerg		2.1	20
	Fredericia		1.9	9
	Holstebro		2.4	9
	Skejby		2.4	50
	Viborg		2.5	13
	Aalborg	2.7	16	
Denmark	2.3	196		

Table 8. KT/V measurements in peritoneal dialysis patients. The table shows average values for Denmark as a whole and for 13 nephrological centers. No major differences between the centers. Results from APD patients and CAPD patients are separated.

		Department	P-creatinin for HD patients	
			Mean	No.of cases
Hemodialysis and P-creatinin	Center- HD	Rigshospitalet	643	176
		Herlev	772	116
		Hillerød	805	78
		Roskilde	823	56
		Holbæk	716	92
		Nykøb.Falster	824	84
		Rønne	654	18
		Odense	720	153
		Sønderborg	684	69
		Esbjerg	734	54
		Fredericia	728	129
		Holstebro	664	87
		Skejby		
		Viborg	818	60
	Aalborg	755	140	
	Denmark	733	1312	
	Limited Care	Rigshospitalet	831	34
		Herlev	552	1
		Aalborg	789	22
		Denmark	810	57

Table 9. Start values of P-creatinin in Danish hemodialysis patients. The table includes figures from center-hemodialysis patients in 14 centers and from 3 centers with limited-care patients.

		Department	P-creatinin PD patients	
			Mean	No.of cases
Peritoneal-dialysis and P-creatinin	CAPD	Rigshospitalet	727	71
		Herlev	855	30
		Hillerød	794	26
		Roskilde	749	16
		Holbæk	665	13
		Odense	705	32
		Sønderborg	694	11
		Esbjerg	668	25
		Fredericia	670	34
		Holstebro	666	14
		Skejby		
		Viborg	653	14
		Aalborg	789	17
		Denmark	726	303
	ADP	Rigshospitalet	684	7
		Herlev	862	13
		Hillerød	709	12
		Roskilde	720	13
		Holbæk	759	5
		Odense	812	20
		Sønderborg	790	16
		Esbjerg	752	21
		Fredericia	740	16
		Holstebro	727	10
		Skejby		
		Viborg	778	19
Aalborg	770	17		
Denmark	765	169		

Table 10. Values of P-creatinin in Danish peritoneal-dialysis patients. The table includes figures from 13 centers. Results from CAPD and APD patients are separated.

		Department	Hemoglobin HD patients	
			Mean	No.of cases
Hemodialysis and Hemoglobin	Center- HD	Rigshospitalet	7.0	180
		Herlev	6.8	117
		Hillerød	7.2	78
		Roskilde	7.5	56
		Holbæk	7.1	92
		Nykøb.Falster	7.1	84
		Rønne	7.6	18
		Odense	7.1	155
		Sønderborg	7.1	69
		Esbjerg	7.3	54
		Fredericia	7.3	128
		Holstebro	7.1	87
		Skejby	7.6	172
		Viborg	7.1	60
	Aalborg	6.9	140	
	Denmark	7.2	1490	
	Limited Care	Rigshospitalet	7.4	34
		Herlev	7.9	1
		Aalborg	7.3	22
		Denmark	7.4	57

Table 11. Values of Hemoglobin in Danish hemodialysis patients. The table includes figures from center-hemodialysis patients in 14 centers and from 3 centers with limited-care patients.

		Department	Hemoglobin PD patients	
			Mean	No.of cases
Peritoneal-dialysis and Hemoglobin	CAPD	Rigshospitalet	7.4	71
		Herlev	7.1	30
		Hillerød	7.2	26
		Roskilde	7.4	16
		Holbæk	7.4	12
		Odense	7.6	29
		Sønderborg	7.5	10
		Esbjerg	7.4	25
		Fredericia	7.8	34
		Holstebro	7.0	14
		Skejby	7.6	2
		Viborg	7.9	14
		Aalborg	7.3	17
		Denmark	7.4	300
		ADP	Rigshospitalet	7.2
	Herlev		7.0	13
	Hillerød		7.2	12
	Roskilde		7.5	13
	Holbæk		8.6	5
	Odense		7.1	20
	Sønderborg		7.1	13
	Esbjerg		7.6	21
	Fredericia		7.7	16
	Holstebro		7.4	11
	Skejby			
	Viborg		7.3	19
	Aalborg	7.7	16	
Denmark	7.4	169		

Table 12. Values of hemoglobin in Danish peritoneal-dialysis patients. The table includes figures from 13 centers. Results from CAPD and APD patients are separated.

		Department	Hemoglobin HD patients	
			Mean	No.of cases
Hemodialysis and P-albumin	Center- HD	Rigshospitalet	34	175
		Herlev	34	116
		Hillerød	39	78
		Roskilde	39	56
		Holbæk	33	93
		Nykøb.Falster	32	83
		Rønne	43	18
		Odense	40	153
		Sønderborg	36	69
		Esbjerg	36	54
		Fredericia	40	128
		Holstebro	37	87
		Skejby	35	223
		Viborg	34	59
	Aalborg	35	140	
	Denmark	36	1532	
	Limited Care	Rigshospitalet	40	33
		Herlev	29	1
		Aalborg	37	22
		Denmark	38	56

Table 13. Values of P-albumin in Danish hemodialysis patients. The table includes figures from center-hemodialysis patients in 14 centers and from 3 centers with limited-care patients.

		Department	P-albumin PD patients	
			Mean	No.of cases
Peritoneal-dialysis and P-albumin	CAPD	Rigshospitalet	31	65
		Herlev	34	30
		Hillerød	35	26
		Roskilde	36	16
		Holbæk	33	13
		Odense	38	36
		Sønderborg	35	11
		Esbjerg	33	25
		Fredericia	35	34
		Holstebro	35	14
		Skejby	34	26
		Viborg	33	15
		Aalborg	33	17
		Denmark	34	328
		ADP	Rigshospitalet	33
	Herlev		36	13
	Hillerød		35	12
	Roskilde		37	13
	Holbæk		34	5
	Odense		35	18
	Sønderborg		36	16
	Esbjerg		32	21
	Fredericia		36	16
	Holstebro		35	11
	Skejby		33	50
	Viborg		34	19
	Aalborg	34	16	
Denmark	34	217		

Table 14. Values of P-albumin in Danish peritoneal-dialysis patients. The table includes figures from 13 centers. Results from CAPD and APD patients are separated.

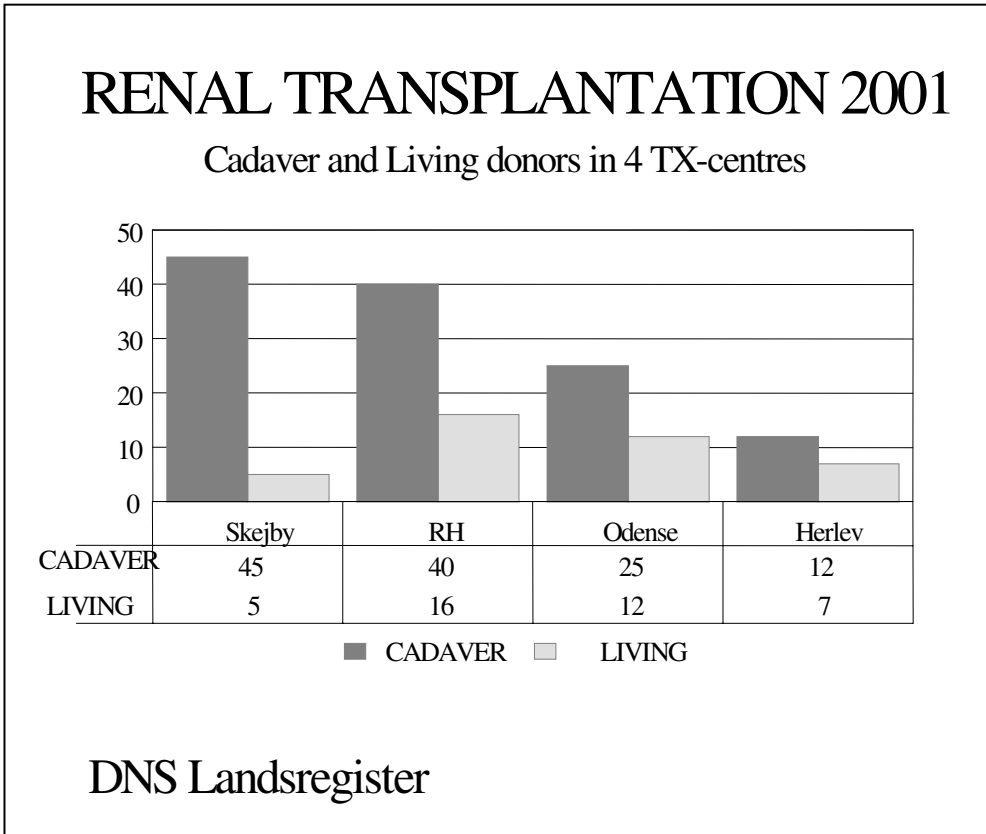


Fig. 13

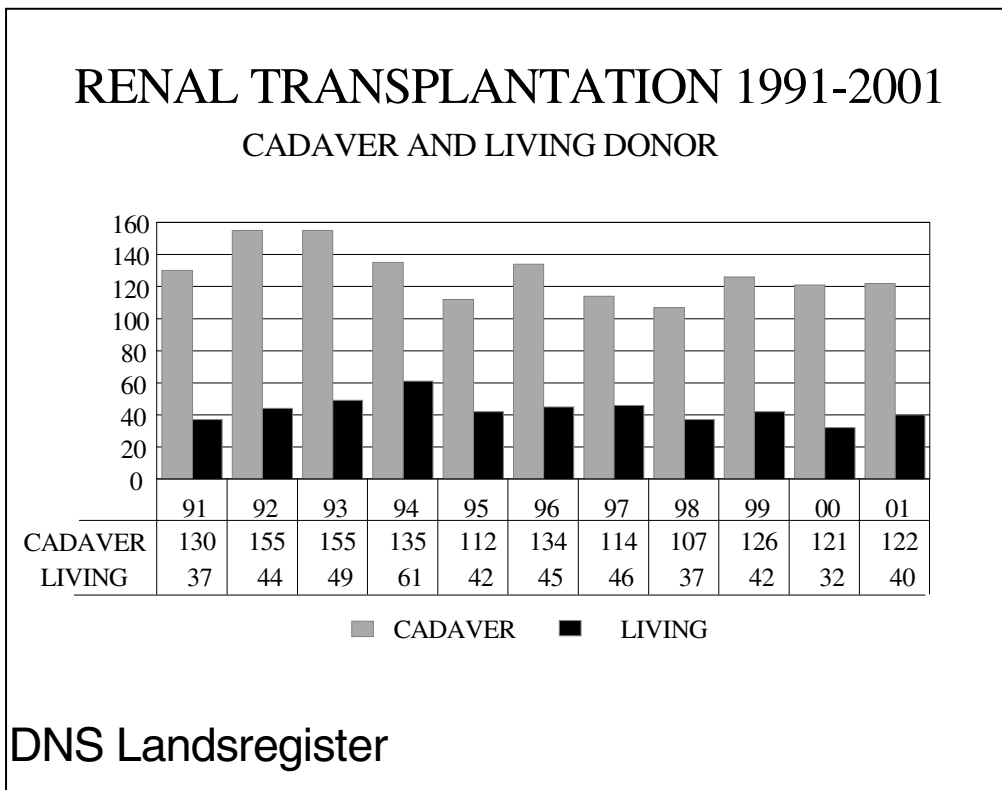


Fig. 14

Renal transplantation 1991 - 2001

Renal transplantation 1991 - 2001									
Cadaver kidney					Living donor kidney				Sum
Year	1	2	3	4	1	2	3	4	
1991	98	25	7	0	25	9	1	2	167
1992	115	32	7	1	33	8	3	0	199
1993	121	25	9	0	39	7	3	0	204
1994	98	26	7	4	53	6	1	1	196
1995	94	10	8	0	35	6	1	0	154
1996	105	22	7	0	44	1	0	0	179
1997	89	19	5	1	42	3	0	1	160
1998	78	23	4	2	36	1	0	0	144
1999	96	19	10	1	37	5	0	0	168
2000	98	16	7	0	27	5	0	0	153
2001	95	23	4	0	33	6	1	0	162

Table 15. Renal transplantations 1991 – 2001, stratified according to source of donor organ, transplantation number (1-4) and year of transplantation.

Renal Transplantation 2001

Renal transplantation 2001									
Cadaver kidney					Living donor kidney				Sum
Center	1	2	3	4	1	2	3	4	
Skejby	34	8	3	0	4	1	0	0	50
RH	34	5	1	0	14	2	0	0	56
Odense	15	10	0	0	8	3	1	0	37
Herlev	12	0	0	0	7	0	0	0	19
Total	25	23	4	0	33	6	1	0	162

Table 16. Renal transplantations 2001, stratified according to source of organ donor organ, transplantation number (1-4) and transplantation center.

Living donor-relation between donor and recipient

Year	Parents	Siblings				Other related	Unrelated	Sum
		Shared haplotypes			Ident. Twins			
		2	1	0				
1991	16	12	8	0	0	1	0	37
1992	27	6	4	1	0	4	2	44
1993	20	10	7	1	1	7	3	49
1994	31	10	12	2	1	3	2	61
1995	26	4	4	0	0	5	3	42
1996	29	3	6	2	1	1	3	45
1997	26	12	6	0	1	0	1	46
1998	17	8	10	0	0	0	2	37
1999	26	2	4	2	0	5	3	42
2000	18	5	5	0	0	1	3	32
2001	13	4	11	2	0	5	5	40

Table 17. Transplantation with living donor kidneys 1991 – 2001. Stratified according to donor-recipient relationship and year of transplantation.

Tissue typing and transplantation

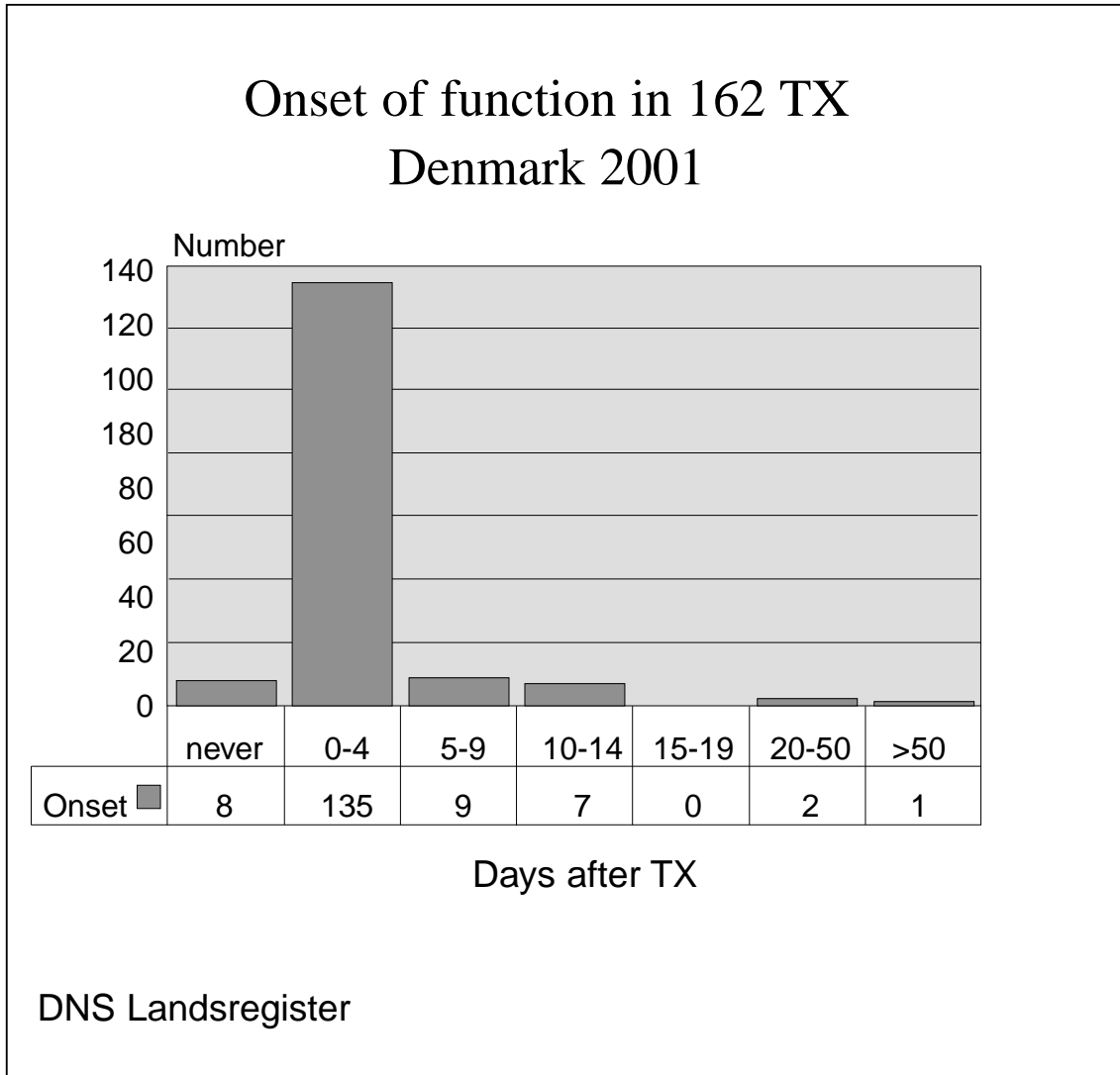
						Antal transplantationer		
DR mismatches	0	B mismatches	0	A mismatches	0	8		
					1	5		
					2	1		
		1	B mismatches	1	A mismatches	0	6	
						1	14	
						2	7	
			2	B mismatches	2	A mismatches	0	4
							1	9
							2	4
	1	B mismatches	0	A mismatches	0	5		
					1	9		
					2	14		
			1	A mismatches	0	35		
					1	3		
					2	7		
		2	B mismatches	2	A mismatches	0	8	
						1	5	
						2	5	
2	B mismatches	1	A mismatches	1	7			
				2	1			
				2	3			
2	B mismatches	2	A mismatches	1	3			
				2	2			
Antal transplantationer i alt						157		

Table 18 shows the distribution of HLA mismatches in transplanted kidneys during 2001. Data on 157 of 162 transplanted kidneys.

Transplantation follow-up centres in 2001

Center	No	Center	No.
Esbjerg	5	Rigshosp.	418
Fredericia	0	Roskilde	26
Herlev	233	Rønne	0
Hillerød	0		
Holbæk	17	Sønderb.	2
Holstebro	51	Viborg	54
Nykøbing F	0	Aalborg	112
Odense	230	Skejby	239

Table 19. The distribution of ambulatory follow up of 1387 Danish renal transplant patients in 15 nephrological centres. It can be seen that most nephrological centres are involved in controlling of stable renal transplant patients. The four transplantation centres are marked.



Renal Transplantation 2001 - Non-functioning grafts includes 3 never functioning grafts and 5 with no function 31.12.01

Fig. 15. Day of onset of function in 162 transplantations in 2001.

Causes of death 2001				
	Hemodialysis	P-dialysis	Renal-Tx	Sum
Cardiac	108	27	8	143
Vascular	35	9	2	46
Infection	61	13	5	79
Malignancy	28	5	5	38
Other causes	138	25	23	186
Sum	370	79	43	492

Table 20. Causes of death in 497 patients who died in 2001. Cardiac includes acute myocardial infarction, hyper- and hypokalaemia, hypertensive heart failure, fluid overload and cardiac arrest of unknown cause. Vascular causes includes mainly cerebrovascular disease. Infection includes all bacterial and viral diseases. The high number of other causes are due to lack of causes in patients found dead after comparison with the national CPR-registration. This will be corrected in our next report.

Death rate

A more precise method to calculate death rate has been used this year:

$$\text{Death rate} = \text{Number of death} \times 100 / \text{Person-years of observation}$$

For comparison death rate from previous years has been changed and the results shown in table 14.

Death rate for 2001

Hemodialysis:

	<u>Number</u>
Dead	369
Number of patients treated in 2001	2194
Average number of days in treatment	264
Number of person years	1587

Death rate in 100 person years **23,3**

Peritoneal dialysis:

	<u>Number</u>
Dead	79
Number of patients treated in 2001	860
Average number of days in treatment	249
Number of person years	586

Death rate in 100 person years **13,5**

Transplantation:

	<u>Number</u>
Dead	43
Number of patients treated in 2001	1506
Average number of days in treatment	330
Number of person years	1361

Death rate in 100 person years **3,2**

Death rate from 1991 - 2001

Year	Hemodialysis	Peritoneal dialysis	Transplantation
	Death rate expressed in number per 100 person years		
1991	20.6	13.4	3.9
1992	22.2	19.6	4.9
1993	26.5	16.0	4.3
1994	23.8	18.6	4.3
1995	27.2	17.8	4.4
1996	25.6	13.6	3.0
1997	24.5	14.9	4.7
1998	24.5	17.8	2.9
1999	23.2	13.8	3.4
2000	25.2	15.4	2.6
2001	23.3	13.5	3.2

Table 21 shows the variation in death rate during the last 10 years expressed in *number of death per 100 person years*. In earlier reports death rate has been expressed in % death of patients in treatment at the start of the year + patients started treatment during the year. For details see page 34.

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