DANSK NEFROLOGISK SELSKAB

Landsregister for patienter
i aktiv behandling for
kronisk nyresvigt
Rapport for Danmark 2006

Danish National Registry
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Forord

Det er med beklagelse at årsrapporten for DNSL 2006 publiceres med betydelig forsinkelse i år. Hovedforklaringen er den svære sekretærmangel som flere sygehuse oplever i disse år. Registerudvalget vil bestræbe sig at årsrapporten udkommer til rette tid i 2008, og planlægger allerede nu tiltag for at lette tilbagerapportering fra de enkelte centre. Som følge af den sene indberetning, er der heller ikke været foretaget den sædvanlig kvalitetskontrol via UNI-C. Mindre fejl kan forekomme, og vil blive rettet retrospektivt i årsrapporten for 2007.

DNSL står overfor betydelige udfordringer i den nærmeste fremtid. Først, er det ved vemod at udvalget siger farvel til Hans Løkkegaard, vores registeransvarlig igennem de sidste 16 år. Han står som nærmest eneansvarlig for DNSLs opståen og drift, og vi skylder ham en stor tak for sin indsats.

Udvalget består nu af følgende medlemmer:

Fra Dansk Nefrologisk Selsakb:
Overlæge *Anne-Lise Kamper*, Rigshospitalet. Formand for registerudvalget.
Overlæge *James Heaf*. Herlev. Registeransvarlig.
Overlæge *Søren Schwarz Sørensen*, Rigshospitalet
Overlæge *Steen Fugleberg*, Herlev
Overlæge *Kaj Anker Jørgensen*, Skejby
Overlæge *Niels Løkkegaard*, Holbæk

Fra Kompetencecenter Syd:
Informatikkonsulent *Niels Pedersen*
Professor *Anders Green*

Som betingelse for fortsat støtte fra Sundhedsstyrelsens kvalitetsindikatorpulje, planlægger DNSL et snarlig overgang til en ny edb-platform, Topica 4. Vores edb samarbejde skifter herefter fra UNI-C til Scandihealth, men samarbejdet med Kompetencecenter Syd fortsætter uændret. Den nye platform er on-line, og de lokale registeransvarlige vil få besked om websitets udformning.

Et andet krav fra Sundhedsstyrelsen er at kvalitetsindikatorer skal vurderes løbende, d.v.s. med tilbagerapportering mindst hver 3. måned. P.g.a. resourcemangel, er de lokale centre ikke i stand til at honorere dette krav for de nuværende, primært biokemiske, kvalitetsindikatorer. Det er derfor blevet vedtaget at de nuværende indikatorer skal suppleres med nye indikatorer baseret på patienternes dialyseforløb. Disse vil kræve løbende registrering af patienternes terminal uræmi status, men den samlede arbejdsindsats vil være nogenlunde uændret.

Årsrapporten i år er uændret i opbygningen i forhold til sidste år. Som noget nyt inkluderer rapporten i år detaljer vedrørende calcium, phosphat og PTH værdier fra de enkelte centre, som et direkte resultat af den øget fokus på dette område efter publikation af de K/DOQI guidelines på ement, samt deres oversættelse til dansk. Selv om centrene har indrapporteret peritonitis data siden 2000, er der endnu ikke publiceret landsbaseret data

på emnet. Dette rådes der bod på i år, med en samlede oversigt over peritonitis incidensen fra 2000-2005, som præsenteret ved årsmødet i Maj 2007

August 2007 James Heaf
Registeransvarlig
National koordinator

Indholdsfortegnelse
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James Heaf

Fig. 1 Renal centres in Denmark 2006.

Renal Centres and Population in Denmark

Transpl. Centre	County	Dialysis center	Population
Skejby	Århus	Skejby	657671
	Nordjylland	Aalborg	495068
	Ringkøbing	Holstebro	274574
	Viborg	Viborg	234434
	Total Skejby		1661747
Odense	Fyn	Odense	476580
	Ribe	Esbjerg	224454
	Sønderjylland	Sønderborg	252980
	Vejle	Fredericia	358055
	Total Odense		1312069
Herlev	Københavns amt	Herlev	
	Total Herlev		618237
Rigshospitalet RH	Bornholm	Rønne	43347
	Frederiksberg	RH	91886
	Frederiksborg	Hillerød	375705
	Færørerne	RH	48214
	Grønland	RH	56854
	København	RH	502362
	Roskilde	Roskilde	239049
	Storstrøm	Nykøbing F	262144
	Vestsjælland	Holbæk	304761
	Total RH		1924312
Total population 01.01.2005			**5516365**

Table 1. Population and renal centres in Denmark as of 01.01.2005. Statistical Yearbook 2005

Prevalence of ESRD 1991-2006

Patients on dialysis or with a functioning graft

Treatment	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
CAPD	336	329	362	366	372	359	384	380	412	363	351	303	305	287	238	213
APD	12	10	16	29	33	45	66	78	112	161	246	279	319	328	387	392
Center-IPD	35	27	29	18	18	13	10	8	8	8	4		4	2	1	2
PD + HD									2	7	5	10	8	6	13	13
Home-IPD	1	2	1	0	5	15	12	11	6	3	1	1	1	1	1	0
Center-HD	608	623	711	764	854	936	1043	1165	1280	1438	1562	1681	1683	1736	1750	1737
Lim. Care	37	38	42	43	52	62	57	68	64	73	72	61	76	76	72	93
Home-HD	21	17	16	17	15	13	9	7	9	11	14	24	33	52	74	97
In dialysis	**1050**	**1046**	**1177**	**1237**	**1349**	**1443**	**1581**	**1717**	**1895**	**2071**	**2260**	**2359**	**2429**	**2488**	**2536**	**2547**
Home	370	358	395	412	425	432	471	476	543	552	622	617	666	674	713	715
PD	349	341	379	395	410	419	462	469	532	534	603	583	625	616	626	605
HD	21	17	16	17	15	13	9	7	9	11	14	24	33	52	74	97
PD+HD									2	7	5	10	8	6	13	13
Center	680	688	782	825	924	1011	1110	1241	1352	1519	1638	1742	1763	1814	1823	1832
Transpl.	**927**	**1005**	**1073**	**1137**	**1154**	**1218**	**1230**	**1257**	**1308**	**1346**	**1387**	**1469**	**1558**	**1649**	**1703**	**1774**
In treat-ment	**1977**	**2051**	**2250**	**2374**	**2503**	**2661**	**2811**	**2974**	**3203**	**3417**	**3647**	**3828**	**3987**	**4137**	**4239**	**4321**

Table 2. Treatment modalities for ESRD 1991- 2006.

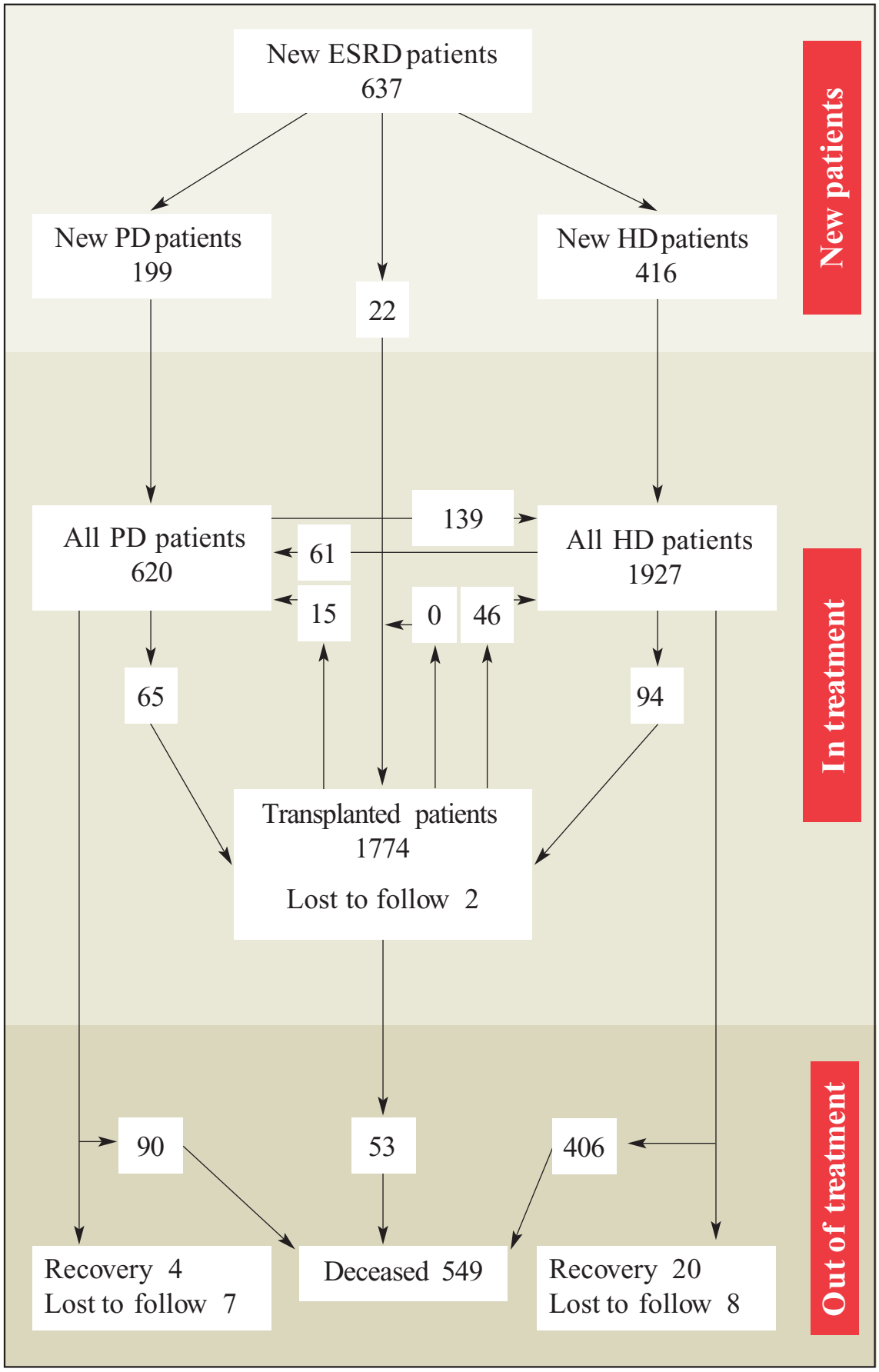

Fig. 2. The figure shows the distribution of 666 End Stage Renal Disease patients starting active therapy (H-dialysis, P-dialysis and Transplantation) in 2006. Furthermore, the number of patients in treatment at the end of the year, as a result of change in treatment modality, death, recovery or lost to follow, are shown. Similar calculations for the individual centres are shown in table 3, 4 and 5.

Treatment modalities during 2006 in individual nephrological centres

New patients – start of treatment Treatment modality							
Center	**P – dialysis**		**Transplantation**		**H – dialysis**		**total**
Esbjerg	10	43%	0		13	57%	23
Fredericia	12	34%	0		23	66%	35
Herlev	14	34%	1	2%	26	64%	41
Hillerød	13	34%	0		25	66%	38
Holbæk	10	22%	0		35	78%	45
Holstebro	5	18%	0		28	82%	33
Nykøbing F	6	25%	0		18	75%	29
Odense	13	23%	6	11%	38	67%	57
RH + Rønne	29	25%	8	7%	77	68%	114
Roskilde	6	23%	0		20	57%	26
Skejby	32	44%	7	11%	34	47%	73
Sønderborg	23	47%	0		26	53%	49
Viborg	6	38%	0		10	62%	16
Ålborg	20	32%	0		43	68%	63
Denmark	**199**	**31%**	**22**	**3%**	**416**	**65%**	**637**

Table 3. Treatment modality in patients starting treatment in 2006.

Patients in treatment as of 31-12-2006 and changes in treatment modality during 2006

Center	In treatment			Change in treatment						
	PD	HD	TX	PD→HD	PD→TX	TX→PD	TX→HD	TX→TX	HD→PD	HD→TX
Esbjerg	38	74	9	10	4	0	0	0	5	1
Fredericia	59	119	51	5	1	1	1	0	0	5
Herlev	59	162	261	8	8	2	5	0	2	10
Hillerød	49	153	10	8	3	0	0	0	7	6
Holbæk	28	103	36	4	1	0	1	0	2	8
Holstebro	14	105	81	3	5	0	3	0	3	8
Nykøbing F	16	85	2	8	1	0	0	0	1	1
Odense	53	192	284	12	7	2	9	0	4	11
RH+ Rønne	71	296	492	19	8	6	12	0	7	19
Roskilde	40	61	31	8	1	0	1	0	8	2
Skejby	82	227	325	16	14	2	7	0	4	14
Sønderborg	44	91	8	11	6	0	0	0	0	0
Viborg	29	59	70	10	0	1	2	0	7	4
Ålborg	38	199	114	17	2	1	5	0	10	6
Denmark	**620**	**1927**	**1774**	**139**	**61**	**15**	**46**	**0**	**60**	**95**

Table 4.

Registration of death, recovery or lost to follow in 2006

Center	In treatment PD			Change in treatment TX		HD		
	Death	recovery	lost to follow	Death	lost to follow	Death	Recovery	lost to follow
Esbjerg	5	0	0	0	0	17	0	0
Fredericia	9	0	0	5	0	28	2	1
Herlev	4	0	0	7	1	40	1	0
Hillerød	1	0	0	0	0	33	1	1
Holbæk	3	0	0	1	0	19	2	0
Holstebro	4	0	0	2	0	24	1	0
Nykøbing F	2	0	0	0	0	23	0	0
Odense	8	1	0	3	1	32	1	0
RH+ Rønne	10	0	0	17	0	59	3	4
Roskilde	7	0	0	1	0	14	0	0
Skejby	23	2	4	12	0	42	5	2
Sønderborg	5	0	0	1	0	19	2	0
Viborg	6	0	2	3	0	17	1	0
Ålborg	3	1	1	1	0	42	1	0
Denmark	**90**	**4**	**7**	**53**	**2**	**409**	**20**	**8**

Table 5.

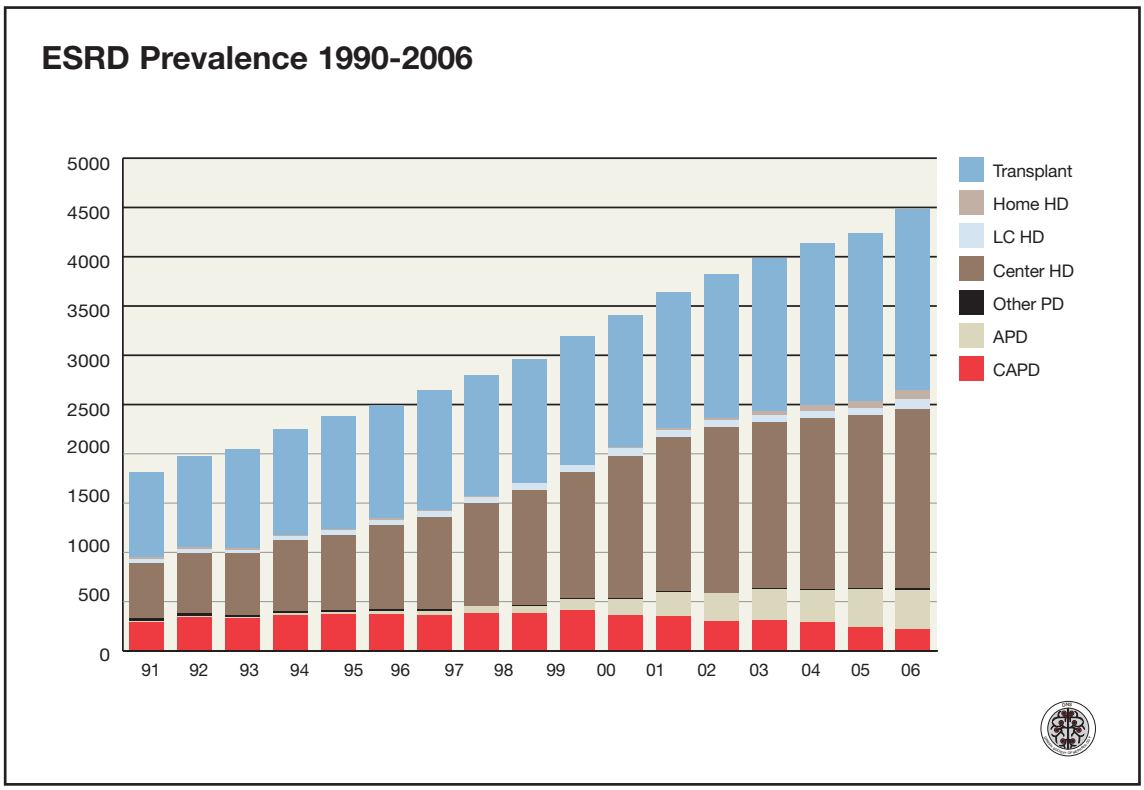
ESRD Prevalence 1990-2006
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
91
92
93
94
95
96
97
98
99
00
01
02
03
04
05
06
Transplant
Home HD
LC HD
Center HD
Other PD
APD
CAPD

Fig. 3.

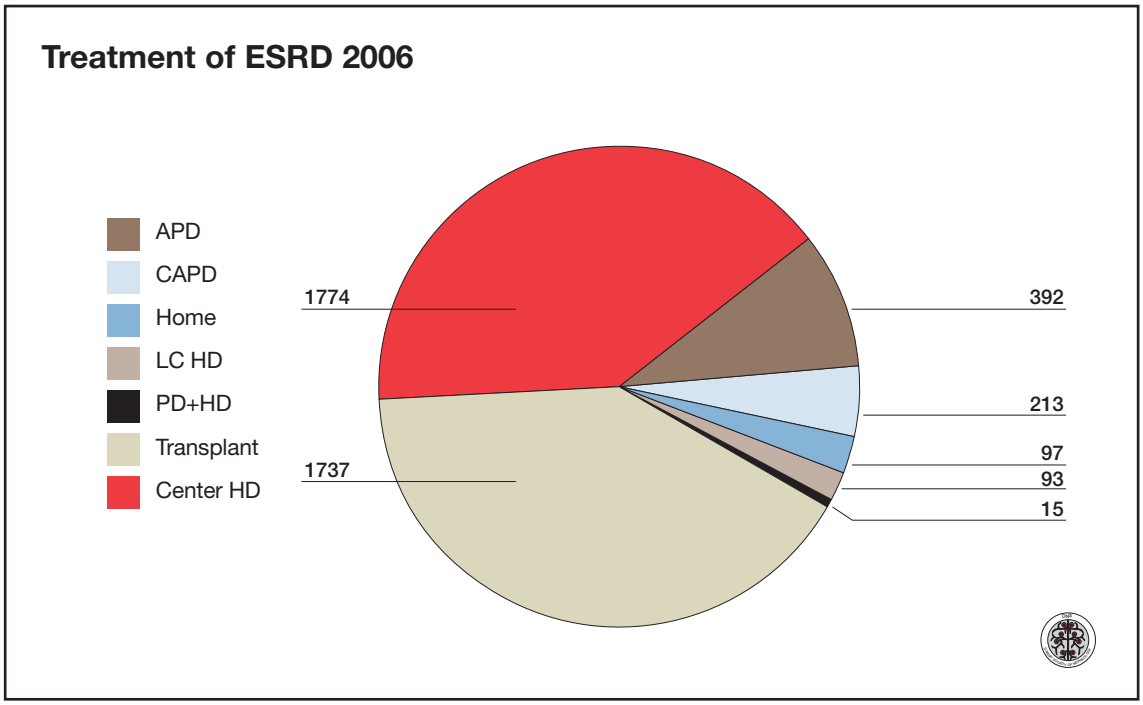
Treatment of ESRD 2006
APD
CAPD
Home
LC HD
PD+HD
Transplant
Center HD
1774
1737
392
213
97
93
15

Fig. 4.

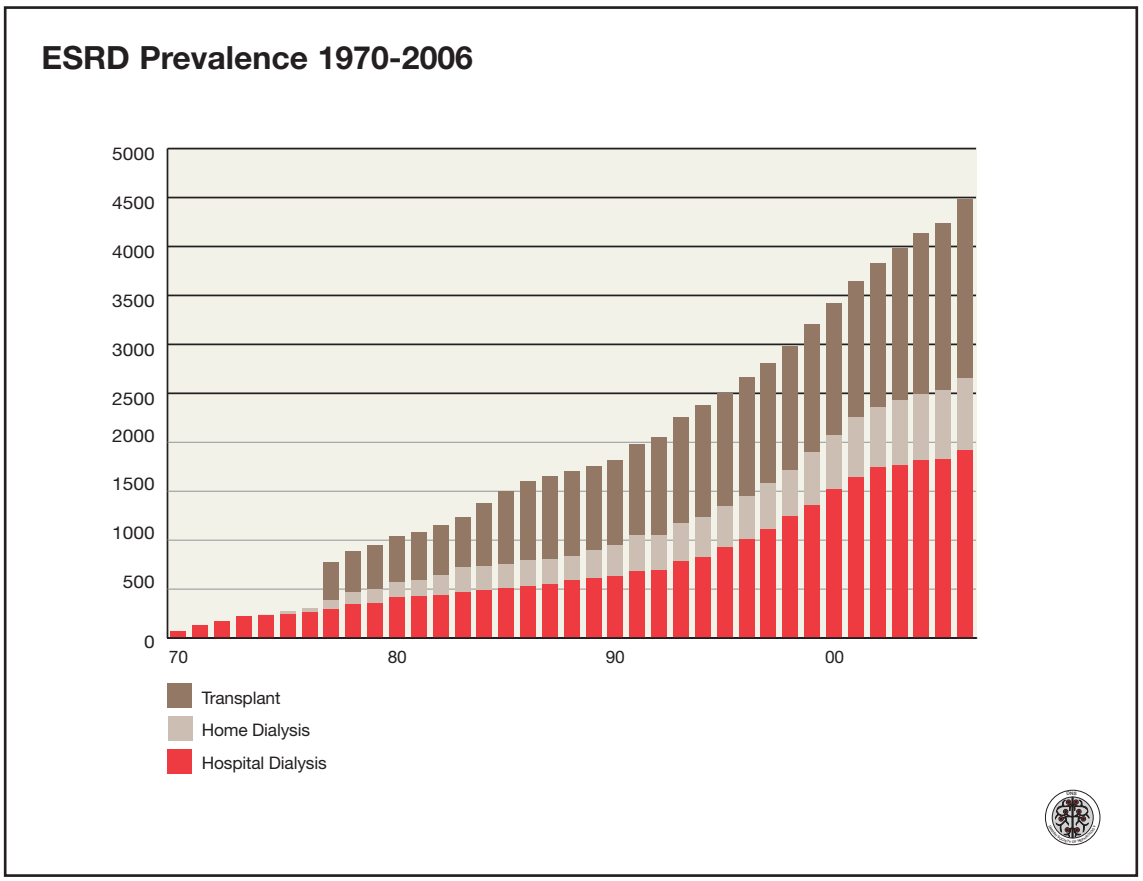
ESRD Prevalence 1970-2006
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
70
80
90
00
Transplant
Home Dialysis
Hospital Dialysis

Fig. 5.

Incidence of ESRD

Centre	1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006	
	No.	Inc.	No.	Inc.	No.	Inc.	No.	Inc.	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	6	27	15	68	25	114	13	59	13	57	17	77	19	85	17	76	32	143	33	147	36	160	25	111	22	98	27	120	20	89	23	102
Fredericia	21	63	17	51	26	79	25	75	29	86	26	77	31	91	33	96	42	122	56	162	43	123	39	111	47	135	51	143	41	115	35	98
Herlev	39	65	36	60	39	65	50	83	40	66	54	89	66	108	62	102	75	123	47	77	67	109	76	123	78	127	96	155	74	120	41	66
Hillerød																					41	112	38	103	46	126	66	176	47	125	38	101
Holbæk			1	3			2	7	2	7	22	76	35	120	24	82	24	82	40	137	40	136	38	127	35	118	28	93	30	98	45	148
Holstebro	11	37	13	48	19	71	21	78	28	104	28	104	17	62	24	88	29	107	30	110	41	150	26	95	25	92	35	127	39	142	33	120
Hvidovre	48	87	39	71	59	107	43	78	49	88	68	121																				
Nykøbing F																							9	RH	6	RH	3	RH	16	61	24	92
Odense	52	73	39	55	42	59	55	118	55	118	31	66	51	108	43	91	59	125	47	100	67	142	52	110	81	171	56	118	64	134	57	120
Rigshosp.	87	69	110	87	124	109	115	153	119	114	103	136	97	90	177	137	183	141	218	168	142	150	154	163	137	136	100	108	97	139	108	145
Roskilde					12	54	15	68	13	58	12	57	17	75	37	162	21	92	23	101	28	121	24	102	12	52	29	122	27	113	26	109
Rønne													1	22	6	136	5	111	2	45	1	23		RH		RH	5	RH	2	RH	6	RH
Skejby	49	81	39	65	66	110	47	77	73	118	45	73	74	118	73	117	79	125	103	163	114	179	102	158	114	179	102	156	90	138	73	111
Sønderbg.									14	56	28	111	28	110	24	95	28	110	18	71	30	118	30	118	25	99	23	91	49	194	49	193
Viborg	18	78	13	56	26	113	26	113	25	109	19	85	25	107	19	82	22	94	22	94	32	137	29	124	28	120	29	124	25	107	16	68
Ålborg	34	69	38	77	54	111	32	66	48	98	56	114	41	85	48	98	54	110	60	122	71	144	56	113	46	93	55	111	45	91	63	127
Denmark	**365**	**70**	**360**	**69**	**492**	**94**	**445**	**86**	**508**	**97**	**510**	**98**	**539**	**100**	**587**	**104**	**653**	**121**	**699**	**129**	**753**	**138**	**698**	**128**	**702**	**129**	**705**	**131**	**666**	**121**	**637**	**115**

Table 6. New patients (number per million per year) 1991-2006.

Age distribution 1991-2006

Year	00-19	20-29	30-39	40-49	50-59	60-69	70-79	>=80	%>=60
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
2002	2	2	7	9	15	26	30	9	65
2003	1	5	5	11	16	26	28	8	62
2004	3	3	5	12	16	26	25	10	61
2005	2	2	6	9	21	25	26	10	61
2006	3	2	5	11	15	26	26	13	65
Population	4	16	14	15	11	9	7	5	21

Table 7. Percentage age distribution of patients starting treatment for ESRD 1991-2005
For comparison the age distribution of the Danish population is also indicated.

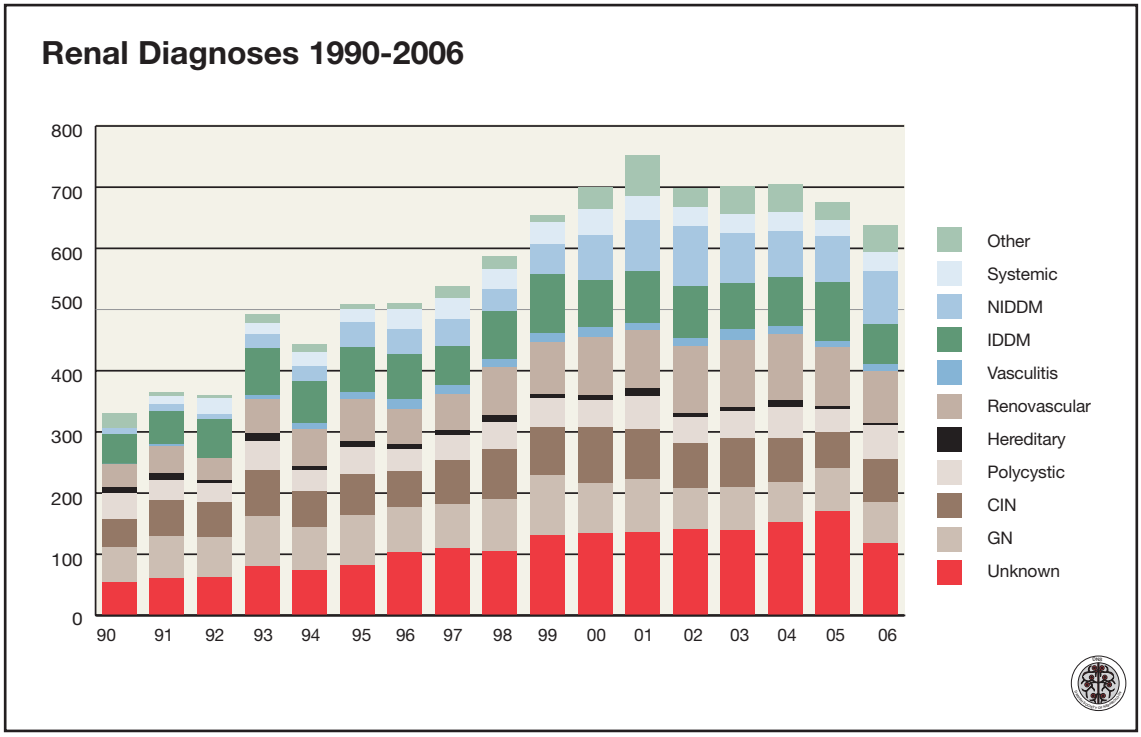
Renal Diagnoses 1990-2006
800
700
600
500
400
300
200
100
0
90
91
92
93
94
95
96
97
98
99
00
01
02
03
04
05
06
Other
Systemic
NIDDM
IDDM
Vasculitis
Renovascular
Hereditary
Polycystic
CIN
GN
Unknown

Fig. 6.

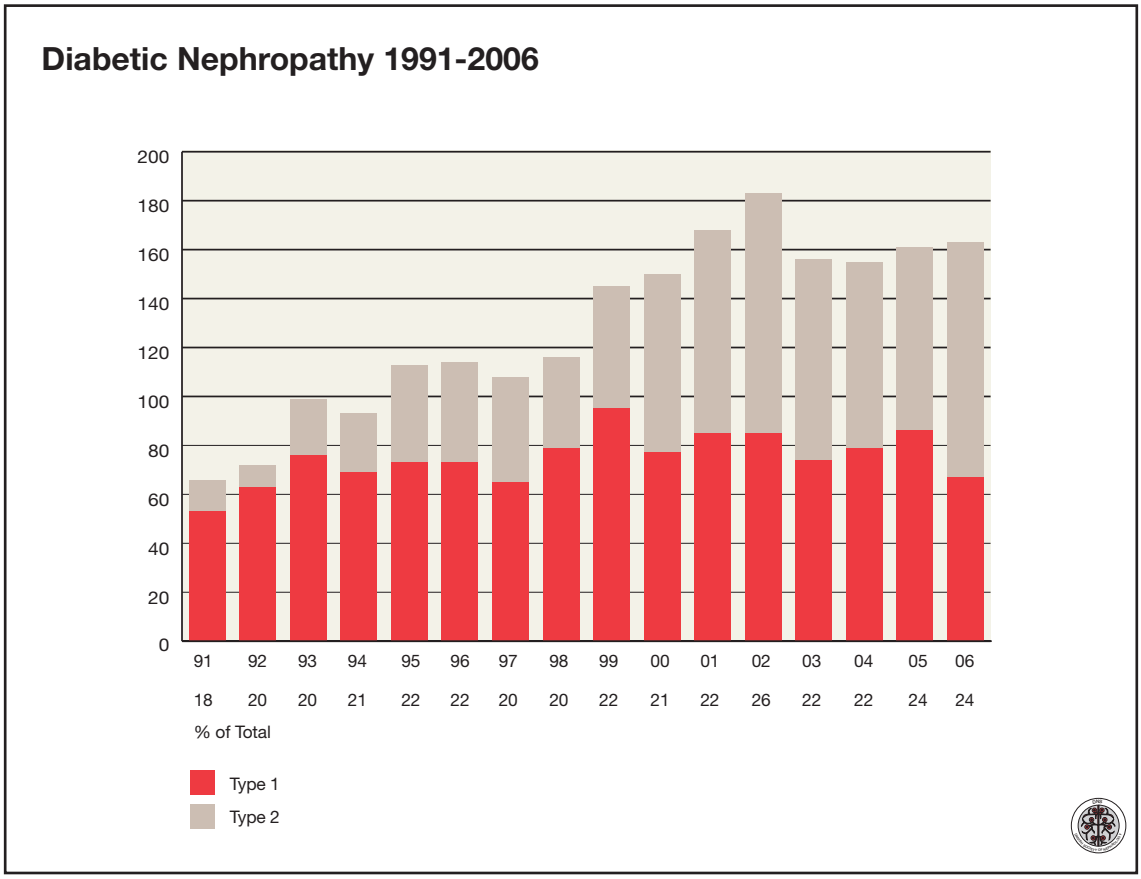
Diabetic Nephropathy 1991-2006
200
180
160
140
120
100
80
60
40
20
0
91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06
18 20 20 21 22 22 20 20 22 21 22 26 22 22 24 24
% of Total
Type 1
Type 2

Fig. 7.

Renal Diagnoses 2006

Age Renal diagnosis	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	All
ESRD,unknown causes	1	1	1	11	12	19	39	34	118
Glomerulonephritis	5	6	3	19	13	9	11	1	67
Pyelo/interst. Nephritis	5	2	2	5	15	15	18	8	70
Cystic renal disease	3	0	3	6	15	17	10	3	57
Alport disease	0	0	1	0	0	0	0	0	1
Other heriditary disease	0	0	0	0	1	0	0	0	1
Renal hypoplasia	0	0	0	0	0	1	0	0	1
Renal vascular disease	0	1	4	4	9	23	27	16	84
Renal vasculitis	0	0	1	0	1	4	4	1	11
Diabetes (IDDM)	0	1	13	15	14	16	7	1	67
Diabetes (NIDDM)	0	0	1	2	5	33	34	11	86
Systemic disease	1	3	1	3	7	9	6	1	31
Other renal diseases	1	1	1	2	4	17	12	5	43
Sum	**16**	**15**	**31**	**67**	**96**	**163**	**168**	**81**	**637**

Table 8. Renal diagnosis in patients starting treatment for ESRD in 2006. The patients are stratified according to age.

Renal Diagnoses 1991-2006

Year Renal diagnosis	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	SUM
ESRD,unknown causes	61	62	81	76	82	103	110	105	131	134	136	142	139	153	170	118	1858
Glomerulonephritis	68	67	81	69	82	74	72	85	99	82	86	66	71	65	71	67	1262
Pyelo/interst. Nephritis	59	57	76	59	67	58	72	81	78	92	83	74	79	71	58	70	1179
Cystic renal disease	33	30	47	34	43	37	40	45	47	44	53	41	45	51	38	57	729
Alport disease	3	2	2	2	1	4	2	1	0	3	2	3	2	4	1	1	37
Other heriditary disease	3	2	4	1	6	2	4	4	3	2	6	2	0	6	3	1	53
Renal hypoplasia	6	1	6	4	4	1	3	6	3	3	5	2	4	2	1	1	53
Renal vascular disease	44	36	57	60	68	58	58	79	85	95	95	110	110	107	96	84	1276
Renal vasculitis	3	0	6	10	13	17	15	12	16	16	12	13	18	14	11	11	192
Diabetes (IDDM)	53	63	76	69	73	73	65	79	95	77	85	85	74	79	86	67	1251
Diabetes (NIDDM)	13	9	23	24	40	41	43	37	50	73	83	98	82	76	75	86	859
Systemic disease	13	26	18	24	22	33	34	32	36	43	39	32	32	31	25	31	491
Other renal diseases	6	5	15	13	7	9	21	21	10	35	68	30	46	46	31	43	410
Sum	**365**	**360**	**492**	**445**	**508**	**510**	**539**	**587**	**653**	**699**	**753**	**698**	**702**	**705**	**666**	**637**	**9649**

Table 9. Renal diagnoses in patients starting treatment 1991-2006.

Renal transplantation 2006

	Cadaver kidney				Living donor kidney		
	transplantation nummer				transplantation nummer		
Center	1	2	3	4	1	2	***Sum***
Herlev	11	1	0	0	4	0	16
Odense	13	2	0	0	18	3	36
Rigshospitalet	36	4	2	0	9	3	54
Skejby	35	9	3	1	17	3	68
Total	95	16	5	1	48	9	174

Table 10. Renal transplantations 2006, stratified according to source of donor organ, transplantation number (1-4) and transplantation center

Renal transplantation 1991–2006

Renal transplantation 1991-2005									
	Cadaver kidney				Living donor kidney				
Year	1	2	3	4	1	2	3	4	***Sum***
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
2002	102	26	3	1	38	1	0	0	171
2003	98	27	4	0	44	0	3	0	176
2004	112	19	3	2	45	7	0	0	188
2005	96	18	4	2	42	7	0	0	169
2006	95	16	5	1	48	9	0	0	174

Table 11. Renal transplantations 1991-2006, stratified according to source of donor organ, transplantation number (1-4) and year of transplantation.

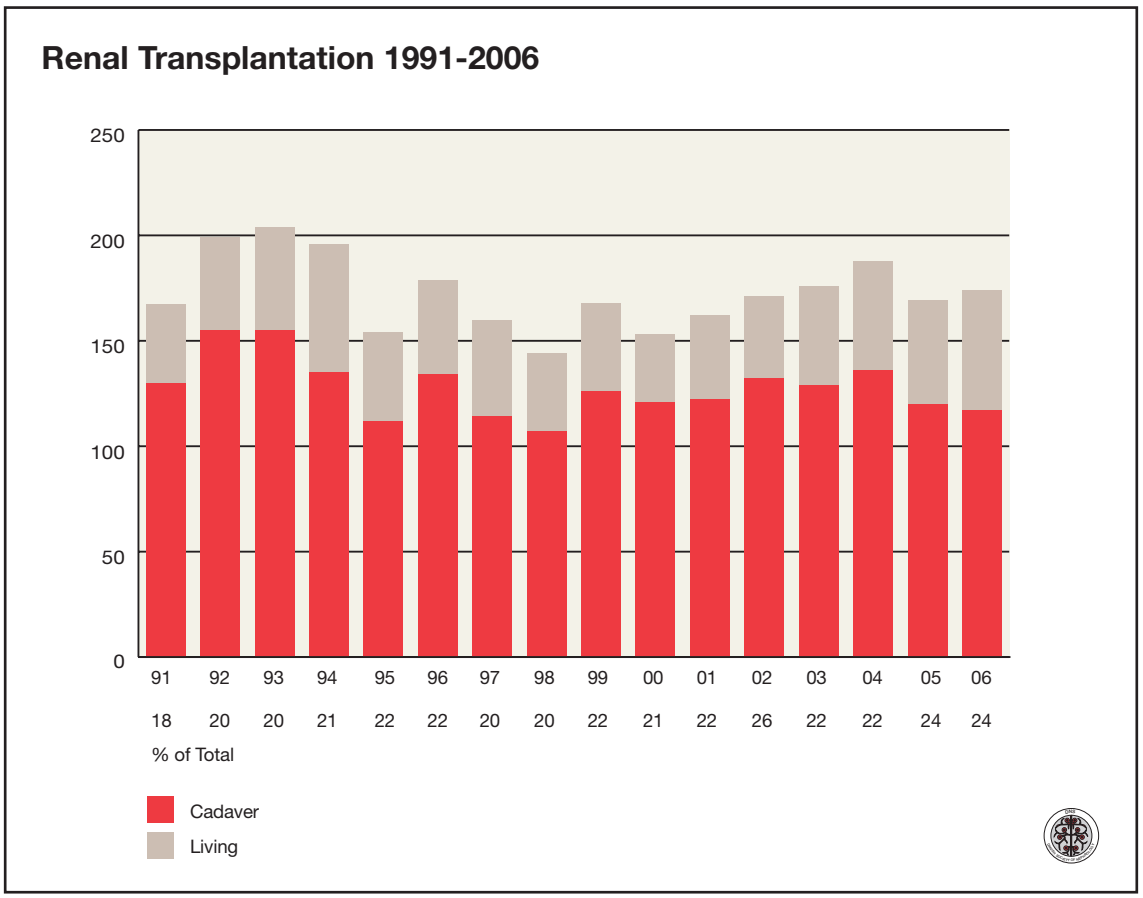
Renal Transplantation 1991-2006
250
200
150
100
50
0
91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06
18 20 20 21 22 22 20 20 22 21 22 26 22 22 24 24
% of Total
Cadaver
Living

Fig. 8.

Living donor-relation between donor and recipient

Year	Parents	Siblings				Other related	Unre-lated	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
2002	23	4	4	0	0	2	6	39
2003	22	2	6	2	0	6	9	47
2004	30	5	3	1	0	5	8	52
2005	17	6	7	0	0	5	14	49
2006	19	7	6	1	0	10	14	57

Table 12. Transplantation with living donor kidneys 1991-2006. Stratified according to donor-recipient relationship and year of transplantation.

Transplantation follow-up centres in 2006

Center	No	Center	No.
Esbjerg	5	Rigshospitalet	538
Fredericia	55	Roskilde	35
Herlev	271	Rønne	0
Hillerød	1		
Holbæk	28	Sønderborg	4
Holstebro	76	Viborg	67
Nykøbing F	0	Aalborg	116
Odense	289	Skejby	344

Table 13. The four transplantation centres are marked.

Transplantation in foreign countries

Year	Number	No. Different Centres
1991	1	1
1992	0	
1993	3	2
1994	1	1
1995	1	1
1996	0	
1997	2	2
1998	4	2
1999	4	4
2000	3	3
2001	4	3
2002	2	2
2003	7	4
2004	6	3
2005	6	3
2006	6	
Total number	50	10 different centres

Table 14.

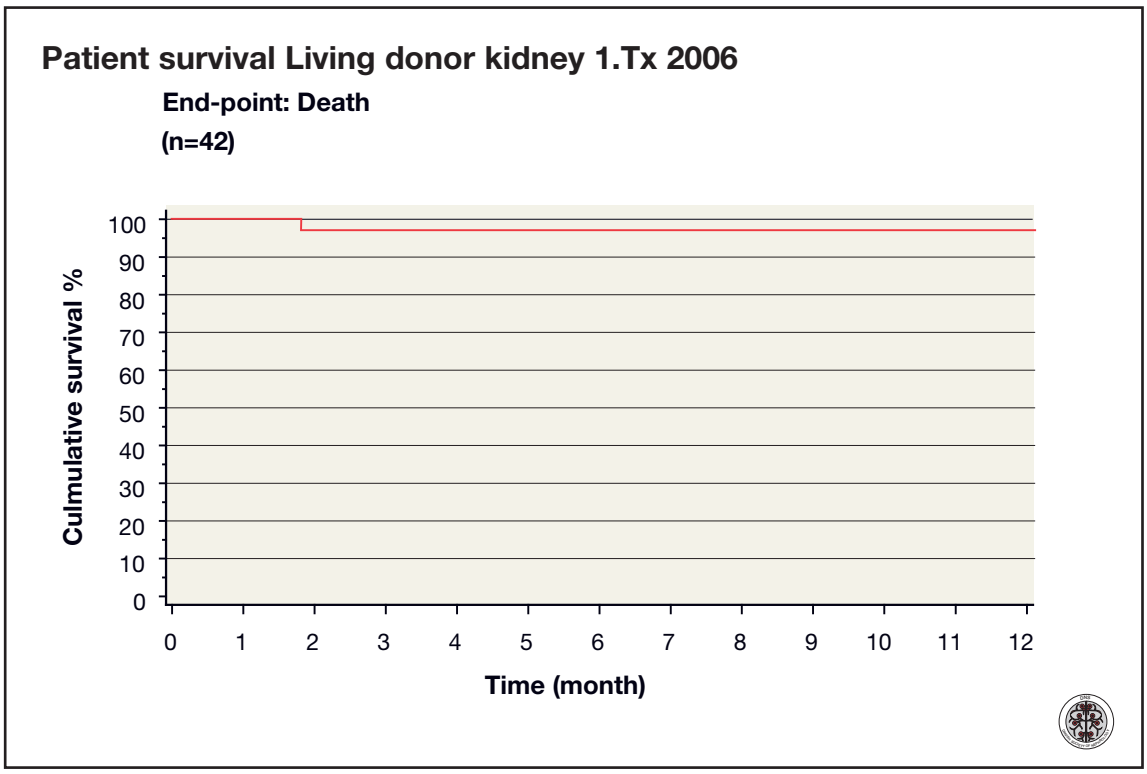
Patient survival Living donor kidney 1.Tx 2006
End-point: Death
(n=42)
Culmulative survival %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12
Time (month)

Fig. 9.

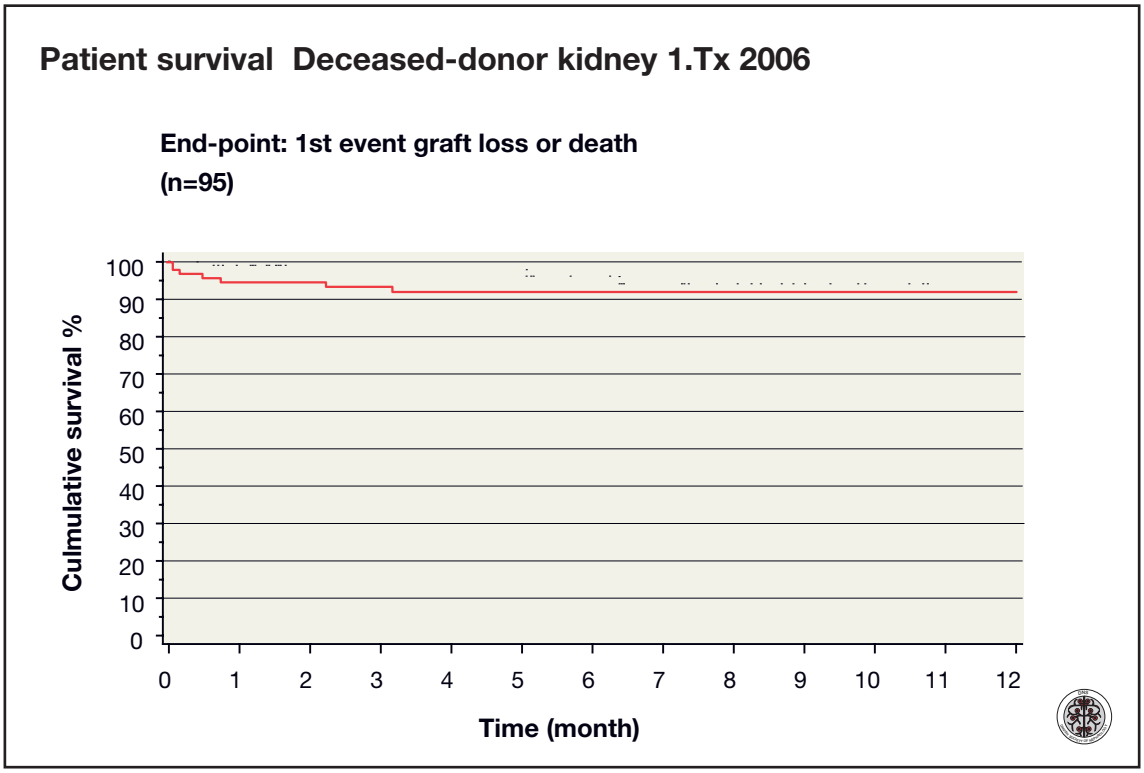
Patient survival Deceased-donor kidney 1.Tx 2006
End-point: 1st event graft loss or death
(n=95)
Culmulative survival %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12
Time (month)

Fig. 10.

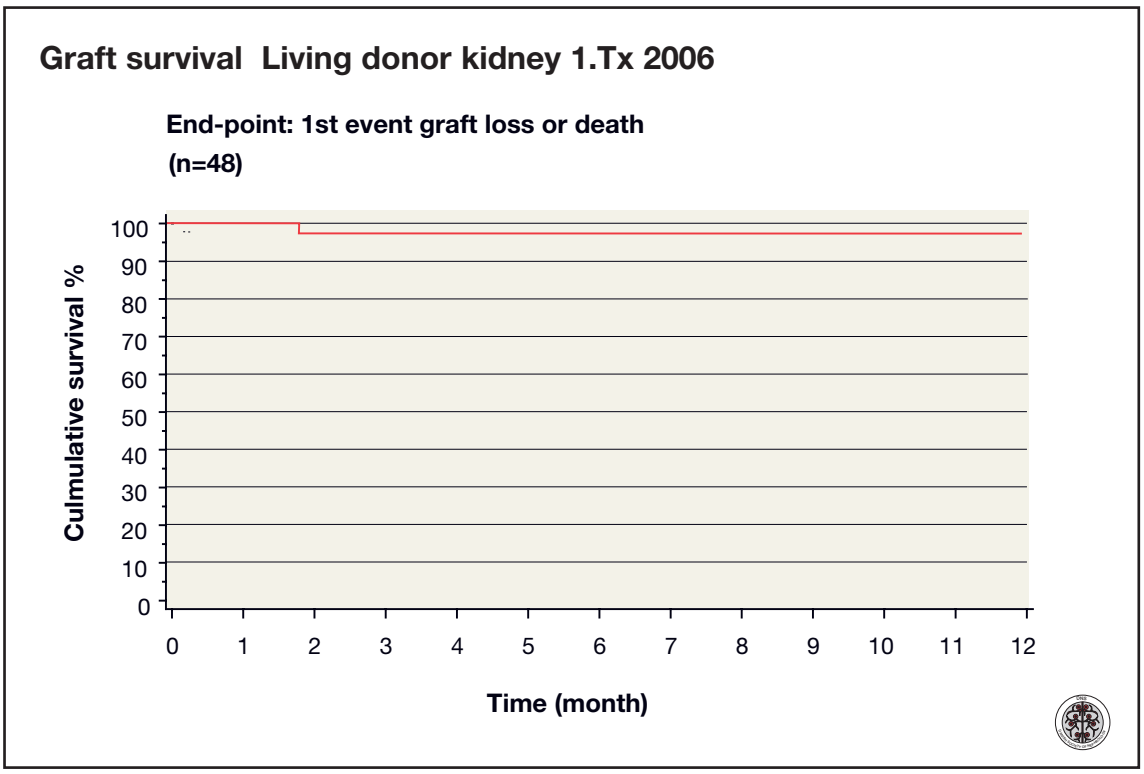
Graft survival Living donor kidney 1.Tx 2006
End-point: 1st event graft loss or death
(n=48)
Culmulative survival %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12
Time (month)

Fig. 11.

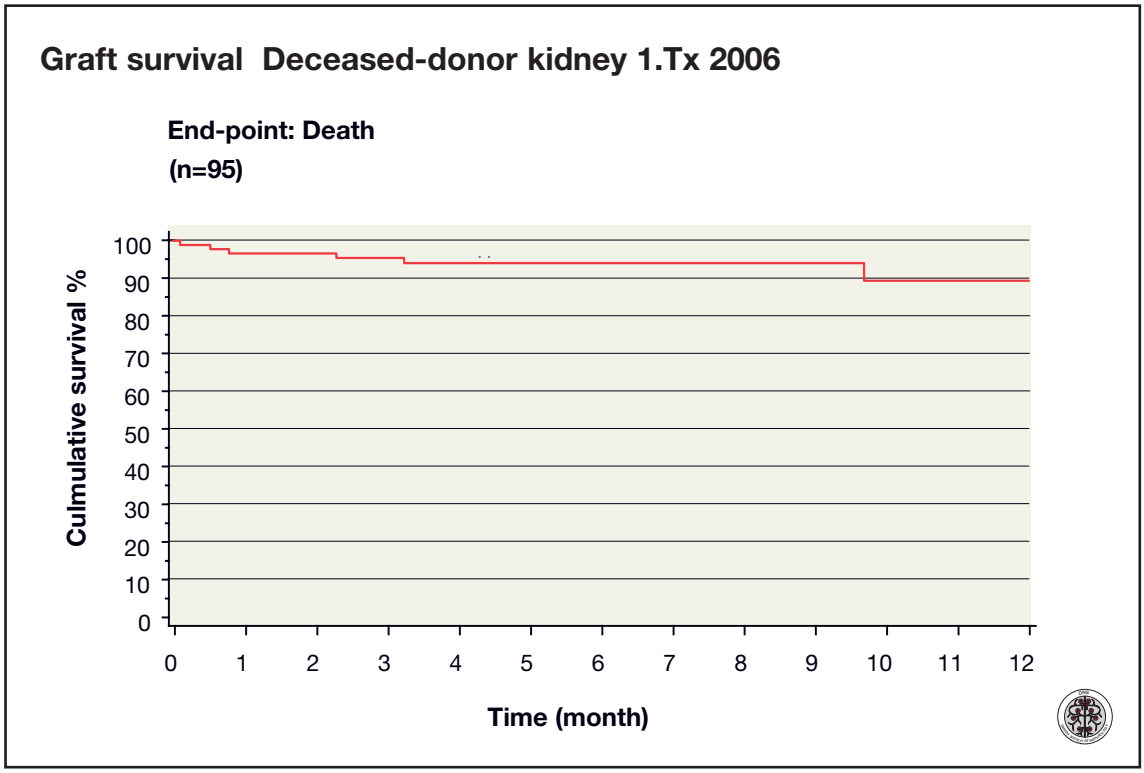
Graft survival Deceased-donor kidney 1.Tx 2006
End-point: Death
(n=95)
Culmulative survival %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12
Time (month)

Fig. 12.

Onset of graftfunction

Onset of function	
Days after TX	No. patients
Never	10
0-4	144
5-9	8
10-14	4
15-19	2
20-50	4
>50	2
Total	174

Table 15.

Death rate for 2006

Method of calculation:
Death rate = number of death x 100 / Person – years of observation.
All patients included from the start of active treatment.

Hemodialysis:

	Number
Dead	406
Number of patients treated in 2005	2481
Average number of days in treatment	241
Number of person years	1639

Death rate in 100 person years **24,8**

Peritoneal dialysis:

	Number
Dead	90
Number of patients treated in 2004	902
Average number of days in treatment	219
Number of person years	541

Death rate in 100 person years **16,6**

Transplantation:

	Number
Dead	53
Number of patients treated in 2004	1883
Average number of days in treatment	280
Number of person years	1443

Death rate in 100 person years **3,7**

Death rate from 1991-2006

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
2002	23.4	11.9	2.9
2003	22.6	11.4	2.8
2004	22,3	13,7	2,4
2005	21,3	13,7	3,3
2006	24,8	16,6	3,7

Table 17.

Center ved seneste HB måling i året	Median	Minimum	Percentile 05	Percentile 25	Percentile 75	Percentile 95	Maximum	Antal	% under 6.5
Rigshospitalet	7,3	5,4	5,8	6,7	7,7	8,7	9,6	249	18,9%
Herlev	7,1	3,8	5,7	6,6	7,9	8,6	10,0	188	19,1%
Hillerød	7,5	4,9	6,0	6,9	8,0	8,7	10,5	138	13,0%
Roskilde	7,5	5,3	5,8	6,9	8,3	9,0	9,6	70	8,6%
Holbæk	7,2	5,6	6,0	6,6	7,8	8,6	9,3	93	16,1%
Nykøbing Falster	7,5	6,0	6,3	6,9	8,1	8,8	9,5	89	10,1%
Rønne	7,5	6,5	6,5	7,2	7,9	8,5	8,7	26	
Odense	7,3	4,9	5,5	6,6	7,8	8,5	9,4	181	22,1%
Sønderborg	7,5	3,3	5,5	6,9	8,0	9,0	10,1	84	16,7%
Esbjerg	6,8	5,2	5,8	6,2	7,2	7,8	8,2	77	32,5%
Fredericia	7,5	4,9	6,0	7,1	8,1	8,8	9,3	107	11,2%
Holstebro	7,6	5,6	6,4	7,1	8,0	8,7	9,1	103	5,8%
Skejby	7,4	5,0	6,0	6,9	7,9	8,7	10,3	229	13,1%
Viborg	7,0	4,9	5,7	6,6	7,4	8,3	9,0	59	15,3%
Aalborg	7,2	5,4	5,9	6,8	7,7	8,5	11,6	193	15,0%
Danmark	**7,4**	**3,3**	**5,9**	**6,8**	**7,9**	**8,7**	**11,6**	**1886**	**15,7%**

Tabel 1. HB niveau for kroniske hæmodialyse patienter i 2006 angivet på centerniveau og i gennemsnit for Danmark. Tværsnitsundersøgelse.

Center ved seneste HB måling i året	Median	Minimum	Percentile 05	Percentile 25	Percentile 75	Percentile 95	Maximum	Antal	% under 6.5
Rigshospitalet	7,5	5,3	6,0	6,7	8,0	8,7	9,1	64	18,8%
Herlev	7,4	5,5	5,9	6,9	8,3	9,0	10,6	60	13,3%
Hillerød	7,4	5,4	6,4	7,0	8,0	8,4	9,2	43	4,7%
Roskilde	7,8	5,6	6,5	7,2	8,3	9,3	10,2	39	2,6%
Holbæk	7,4	6,3	6,4	7,0	7,8	9,0	9,4	28	3,6%
Nykøbing Falster	7,8	5,7	5,7	7,2	8,6	-	9,8	18	5,6%
Odense	7,2	3,8	5,6	6,8	7,8	8,5	9,8	50	22,6%
Sønderborg	7,5	5,1	5,2	7,2	7,9	9,2	9,6	44	13,6%
Esbjerg	7,0	5,8	6,0	6,6	7,7	8,6	8,6	38	18,4%
Fredericia	7,6	5,2	5,5	7,0	8,3	9,1	9,7	56	14,3%
Holstebro	7,4	6,6	6,6	7,0	7,9	-	9,4	14	
Skejby	7,6	5,3	6,3	7,1	8,2	9,3	9,7	86	7,0%
Viborg	7,6	5,7	5,7	6,9	7,9	9,1	9,4	29	10,3%
Aalborg	7,7	6,5	6,7	7,2	8,1	9,0	9,5	41	
Danmark	**7,5**	**3,8**	**6,1**	**7,0**	**8,1**	**9,0**	**10,6**	**610**	**10,8%**

Tabel 2. HB niveau i 2006 for patienter i kronisk peritonealdialyse angivet på centerniveau og i gennemsnit for Danmark. Tværsnitsundersøgelse.

Center ved seneste P-albumin måling i året	Median	Minimum	Percentile 05	Percentile 25	Percentile 75	Percentile 95	Maximum	Antal	% under 30
Rigshospitalet	39	19	30	36	42	45	49	248	3,6%
Herlev	36	20	25	32	40	44	49	186	12,4%
Hillerød	39	25	32	36	41	44	48	138	2,9%
Roskilde	37	24	27	34	41	44	51	70	8,6%
Holbæk	35	22	25	32	39	42	44	93	16,1%
Nykøbing Falster	32	12	23	29	35	40	43	89	27,0%
Rønne	33	13	19	31	35	37	37	26	7,7%
Odense	40	18	30	37	43	45	48	181	4,4%
Sønderborg	39	24	32	37	42	45	46	84	2,4%
Esbjerg	40	24	30	37	42	45	47	77	3,9%
Fredericia	39	21	29	37	42	45	47	107	5,6%
Holstebro	39	23	32	37	41	45	47	103	3,9%
Skejby	37	14	25	33	39	43	47	212	14,2%
Viborg	38	25	25	36	40	42	42	59	10,2%
Aalborg	39	15	29	34	42	46	48	193	5,2%
Danmark	**38**	**12**	**27**	**34**	**41**	**44**	**51**	**1866**	**8,1%**

Tabel 3. P-albuminniveau hos patienter i hæmodialyse (HD) angivet på centerniveau og i gennemsnit for Danmark. Tværsnitsundersøgelse.

Center ved seneste P-albumin måling i året	Median	Minimum	Percentile 05	Percentile 25	Percentile 75	Percentile 95	Maximum	Antal	% under 30
Rigshospitalet	37	26	28	33	40	43	47	64	6,3%
Herlev	35	22	25	32	38	42	47	60	13,3%
Hillerød	36	28	28	33	40	41	43	43	7,0%
Roskilde	37	26	26	33	39	42	43	39	7,7%
Holbæk	34	19	23	29	40	44	45	28	25,0%
Nykøbing Falster	31	8	8	26	32	-	42	18	44,4%
Odense	36	25	28	33	40	45	50	50	6,0%
Sønderborg	37	25	28	34	40	43	43	44	6,8%
Esbjerg	37	16	24	34	38	43	44	38	7,9%
Fredericia	37	24	28	33	40	43	44	56	8,9%
Holstebro	38	24	24	36	40	-	42	14	7,1%
Skejby	34	16	21	30	37	43	53	86	17,4%
Viborg	35	24	25	32	37	43	43	29	10,3%
Aalborg	37	16	22	33	40	46	46	41	12,2%
Danmark	**36**	**8**	**26**	**32**	**39**	**43**	**53**	**610**	**11,6%**

Tabel 4. P-albuminniveau hos patienter i peritoneal-dialyse (PD) angivet på centerniveau og i gennemsnit for Danmark. Tværsnitsundersøgelse.

Gennemsnit KT/V i Danmark 2006

		Antal enheder pr. dialyse for seneste KT/V HD måling i året			
		Mean	Minimum	Maximum	Count
Antal dialyser pr.	1	2,48	0,90	4,20	5
Uge for seneste	2	2,17	1,00	4,60	59
KT/V HD måling i	3	1,43	0,70	3,00	426
Året	4	1,26	0,90	1,70	19
	5	1,53	1,40	1,60	3
I alt		1,52	0,70	4,60	512

Tabel 5.

Center ved seneste P-kreatinin måling i året	Median	Minimum	Percentile 05	Percentile 25	Percentile 75	Percentile 95	Maximum	Antal
Rigshospitalet	636	109	236	495	838	1171	1459	250
Herlev	748	200	380	588	906	1270	1783	186
Hillerød	719	183	347	538	891	1137	1415	138
Roskilde	636	41	295	478	839	1131	1210	69
Holbæk	679	196	312	539	792	1100	1194	93
Nykøbing Falster	765	317	395	615	987	1346	1535	89
Rønne	533	250	281	452	696	996	1001	26
Odense	680	243	351	526	821	1109	1373	181
Sønderborg	639	194	382	508	819	1020	1164	84
Esbjerg	637	199	316	526	758	894	966	75
Fredericia	632	227	308	481	808	1084	1432	107
Holstebro	638	231	289	476	781	1018	1251	103
Skejby	667	94	224	473	897	1138	1464	197
Viborg	711	258	375	578	907	1095	1254	59
Aalborg	663	224	324	528	804	1088	1645	193
Danmark	**678**	**41**	**317**	**523**	**841**	**1123**	**1783**	**1850**

Tabel 6. P-kreatinin ved start af HD for de enkelte centre og i gennemsnit for Danmark. Tværsnitsundersøgelse.

Center ved seneste P-kreatinin måling i året	Median	Minimum	Percentile 05	Percentile 25	Percentile 75	Percentile 95	Maximum	Antal
Rigshospitalet	768	262	347	587	959	1237	1337	64
Herlev	792	396	464	624	966	1488	1959	60
Hillerød	751	158	191	496	892	1231	1488	43
Roskilde	915	259	274	566	1162	1406	1786	39
Holbæk	710	333	349	566	887	1014	1016	28
Nykøbing Falster	696	410	410	512	824	-	907	18
Odense	632	265	339	505	917	1105	1286	50
Sønderborg	576	210	315	456	734	984	1021	44
Esbjerg	648	255	277	507	801	1035	1405	37
Fredericia	616	202	265	375	804	1205	1272	56
Holstebro	661	430	430	476	806	-	948	14
Skejby	596	72	228	411	823	1070	1381	86
Viborg	623	186	249	433	916	1121	1141	29
Aalborg	691	212	239	449	892	1097	1224	41
Danmark	**681**	**72**	**296**	**496**	**898**	**1170**	**1959**	**609**

Tabel 7. P-kreatinin for PD-patienter i 2006 for de enkelte centre og i gennemsnit for Danmark. Tværsnitsundersøgelse.

	Calcium-ion (mmol/l)								Total
	<1,15		1,15-1,24		1,25-1,35		>1,35		Antal
	Antal	Procent	Antal	Procent	Antal	Procent	Antal	Procent	
Righospitalet	92	37%	102	41%	43	17%	13	5%	250
Herlev	63	34%	65	35%	47	25%	12	6%	187
Hillerød	34	25%	75	56%	22	16%	4	3%	135
Roskilde	20	29%	23	33%	19	27%	8	11%	70
Holbæk	36	40%	32	36%	17	19%	5	6%	90
Rønne	9	35%	10	39%	6	23%	1	4%	26
Odense	52	29%	80	44%	42	23%	7	4%	181
Sønderborg	21	25%	34	41%	29	35%			84
Esbjerg	32	43%	33	45%	7	10%	2	3%	74
Fredericia	24	23%	52	49%	29	27%	1	1%	106
Holstebro	16	16%	40	39%	31	30%	16	16%	103
Skejby	42	19%	113	51%	52	23%	15	7%	222
Viborg	18	31%	24	41%	15	25%	2	3%	59
Aalborg	41	21%	87	45%	52	27%	13	7%	193
Danmark	500	28%	770	43%	411	23%	99	6%	1780

Tabel 8. P-Calcium-ion for HD-patienter i 2006. Fra Aalborg og Esbjerg er rapporteret total calcium: disse er grupperet <2,30; 2,30-2,49; 2,50-2,70; >2,70.

	Calcium-ion (mmol/l)								Total
	<1,15		1,15-1,24		1,25-1,35		>1,35		Antal
	Antal	Procent	Antal	Procent	Antal	Procent	Antal	Procent	
Righospitalet	9	15%	35	57%	16	26%	1	2%	61
Herlev	8	14%	21	36%	17	29%	13	22%	59
Hillerød	5	12%	24	56%	13	30%	1	2%	43
Roskilde	5	13%	14	36%	14	36%	6	15%	39
Holbæk	10	36%	11	39%	6	21%	1	4%	28
Odense	12	25%	21	43%	14	29%	2	4%	49
Sønderborg	11	25%	21	48%	12	27%			44
Esbjerg	8	22%	14	38%	12	32%	3	8%	37
Fredericia	9	16%	23	41%	22	39%	2	4%	56
Holstebro			8	57%	6	43%			14
Skejby	19	23%	50	60%	11	13%	3	4%	83
Viborg	8	28%	15	52%	6	21%			29
Aalborg	3	7%	21	51%	13	32%	4	10%	41
Danmark	107	18%	278	48%	162	28%	36	6%	583

Tabel 9. P-Calcium-ion for PD-patienter i 2006. Fra Aalborg og Esbjerg er rapporteret total calcium: disse er grupperet <2,30; 2,30-2,49; 2,50-2,70; >2,70.

	Calcium-ion (mmol/l)								Total
	<1,15		1,15-1,24		1,25-1,35		>1,35		Antal
	Antal	Procent	Antal	Procent	Antal	Procent	Antal	Procent	
Righospitalet	27	7%	128	35%	178	49%	33	9%	366
Herlev	9	3%	93	35%	133	51%	28	11%	263
Roskilde			11	33%	17	52%	5	15%	33
Holbæk	1	5%	7	33%	10	48%	3	14%	21
Fredericia	1	2%	17	35%	24	50%	6	13%	48
Holstebro	1	1%	30	42%	32	45%	8	11%	71
Skejby	27	8%	152	47%	115	36%	28	9%	322
Viborg	1	2%	26	41%	28	44%	8	13%	63
Aalborg	16	15%	61	57%	24	22%	6	6%	107
Danmark	83	6%	525	41%	561	43%	125	10%	12964

Tabel 10. P-Calcium-ion for transplanterede patienter i 2006. Fra Aalborg er rapporteret total calcium: disse er grupperet <2,30; 2,30-2,49; 2,50-2,70; >2,70.

2006

	Phosphat (mmol/l)						Total
	<1,1		1,1-1,8		>1,8		Antal
	Antal	Procent	Antal	Procent	Antal	Procent	
Righospitalet	31	12%	150	60%	68	27%	249
Herlev	32	17%	81	43%	74	40%	187
Hillerød	17	13%	94	70%	24	18%	135
Roskilde	1	1%	40	56%	30	42%	71
Holbæk	5	6%	46	52%	38	43%	89
Rønne	3	12%	14	54%	9	35%	26
Odense	20	11%	105	58%	56	31%	181
Sønderborg	7	8%	49	58%	28	33%	84
Esbjerg	9	12%	48	65%	17	23%	74
Fredericia	7	7%	67	63%	32	30%	106
Holstebro	20	19%	67	65%	16	16%	103
Skejby	30	14%	101	64%	51	23%	182
Viborg	4	7%	31	53%	24	41%	59
Aalborg	30	16%	108	56%	55	29%	193
Danmark	216	12%	1001	58%	522	30%	1739

Tabel 11. P-Phosphat for HD-patienter i 2006.

2006

	Phosphat (mmol/l)						Total
	<1,1		1,1-1,8		>1,8		Antal
	Antal	Procent	Antal	Procent	Antal	Procent	
Righospitalet	5	8%	30	48%	28	44%	63
Herlev	9	15%	32	54%	18	31%	59
Hillerød	3	7%	20	48%	19	45%	42
Roskilde	3	8%	24	62%	12	31%	39
Holbæk	1	4%	10	36%	17	61%	28
Odense	5	10%	32	64%	13	26%	50
Sønderborg	2	5%	30	68%	12	27%	44
Esbjerg	3	8%	23	62%	11	30%	37
Fredericia	2	4%	39	70%	15	27%	56
Holstebro	1	7%	10	71%	3	21%	14
Skejby	7	8%	63	75%	14	17%	84
Viborg	3	11%	17	61%	8	29%	28
Aalborg	3	7%	29	71%	9	22%	41
Danmark	47	8%	359	61%	179	31%	585

Tabel 12. P-Phosphat for PD-patienter i 2006.

	Phosphat (mmol/l)						Total
	<1,1		1,1-1,8		>1,8		Antal
	Antal	Procent	Antal	Procent	Antal	Procent	
Righospitalet	228	62%	128	35%	10	3%	366
Herlev	158	60%	100	38%	5	2%	263
Roskilde	15	46%	18	55%			33
Holbæk	13	65%	7	35%			20
Fredericia	32	67%	16	33%			48
Holstebro	48	68%	23	32%			71
Skejby	220	68%	97	30%	5	2%	322
Viborg	44	72%	15	25%	2	3%	61
Aalborg	64	60%	41	38%	2	2%	107
Danmark	822	64%	445	34%	24	2%	1291

Tabel 13. P-Phosphat for transplanterede patienter i 2006.

2006

	PTH						Total
	<150		150-300		>300		Antal
	Antal	Procent	Antal	Procent	Antal	Procent	
Righospitalet	115	48%	62	26%	63	26%	240
Herlev	74	41%	46	26%	60	33%	180
Hillerød	44	33%	55	41%	35	26%	134
Roskilde	17	24%	31	44%	22	31%	70
Holbæk	27	31%	33	38%	28	32%	88
Rønne	8	31%	8	31%	10	39%	26
Odense	68	39%	54	31%	53	30%	175
Sønderborg	34	42%	25	31%	22	27%	81
Esbjerg	26	36%	21	29%	26	36%	73
Fredericia	47	48%	27	27%	25	25%	99
Holstebro	62	60%	33	32%	8	8%	103
Skejby	56	54%	30	29%	18	17%	104
Viborg	22	37%	17	29%	20	34%	59
Aalborg	92	50%	46	25%	47	25%	185
Danmark	692	43%	488	30%	437	27%	1617

Tabel 14. P-PTH for HD-patienter i 2006.

2006

	PTH						Total
	<150		150-300		>300		
	Antal	Procent	Antal	Procent	Antal	Procent	Antal
Righospitalet	16	27%	21	36%	22	37%	59
Herlev	24	41%	16	28%	18	31%	58
Hillerød	15	35%	12	28%	16	37%	43
Roskilde	9	23%	10	26%	20	51%	39
Holbæk	9	35%	4	15%	13	50%	26
Odense	19	42%	12	27%	14	31%	45
Sønderborg	15	35%	21	49%	7	16%	43
Esbjerg	15	41%	12	32%	10	27%	37
Fredericia	19	38%	14	28%	17	34%	50
Holstebro	8	57%	6	43%			14
Skejby	38	58%	20	30%	8	12%	66
Viborg	7	23%	10	33%	13	43%	30
Aalborg	21	51%	14	34%	6	15%	41
Danmark	215	39%	172	31%	164	30%	551

Tabel 15. P-PTH for PD-patienter i 2006.

	PTH						Total
	<150		150-300		>300		
	Antal	Procent	Antal	Procent	Antal	Procent	Antal
Righospitalet	100	71%	24	17%	17	12%	141
Herlev	164	72%	47	21%	17	8%	228
Holbæk	3	50%	1	17%	2	33%	6
Fredericia	10	71%	4	29%			14
Holstebro	8	67%	3	25%	1	8%	12
Skejby	23	64%	11	31%	2	6%	36
Viborg	32	74%	7	16%	4	9%	43
Aalborg	29	60%	15	31%	4	8%	48
Danmark	369	70%	112	21%	47	9%	528

Tabel 16. P-PTH for transplanterede patienter i 2006.

Center	Antal tilfælde af peritonitis	Dage i pd-behandling på center	Antal patienter i pd-behandling på center	Gennemsnitlig antal dage i pd-behandling på center	Antal personår	Rate i 100 person år
Righospitalet	9	20736	107	194	56,66	15,89
Herlev	42	17319	80	216	47,32	88,76
Hillerød	16	12810	57	225	35,00	45,71
Roskilde	17	13997	54	259	38,24	44,45
Holbæk	17	8247	39	211	22,53	75,45
Nykøb. Falster	8	7737	29	267	21,14	37,84
Odense	33	16405	79	208	44,82	73,62
Sønderborg	10	13727	68	202	37,51	26,66
Esbjerg	25	13470	54	249	36,80	67,93
Fredericia	15	18975	75	253	51,84	28,93
Holstebro	3	5902	28	211	16,13	18,6
Skejby	33	28686	143	201	78,38	42,10
Viborg	13	9840	47	209	26,89	48,35
Aalborg	20	11694	60	195	31,95	62,60
Danmark	**261,00**	**199545**	**909**	**220**	**545,20**	**47,87**

Tabel 17. Antal peritonitis tilfælde hos PD-patienter i året 2006 fordelt på de enkelte centre. Ingen angivelse fra Holbæk.

Peritonitis Incidence in Denmark 2000-2005

James Heaf, Herlev Hospital, Denmark

Since 2000, all centers in Denmark have reported all peritonitis episodes occurring in peritoneal dialysis patients to the Danish Society of nephrology National Register. The present study has investigated some current trends in PD therapy.

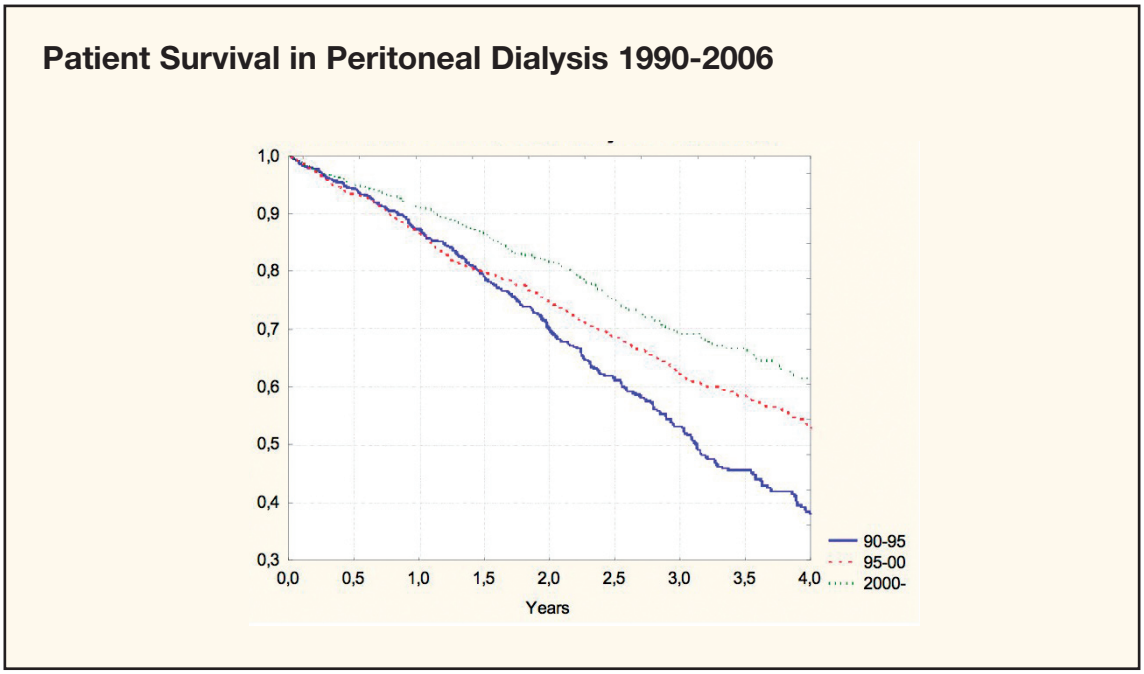

Fig. 1. Patient 2-year survival has improved from 70% to 82% since the early 90s.

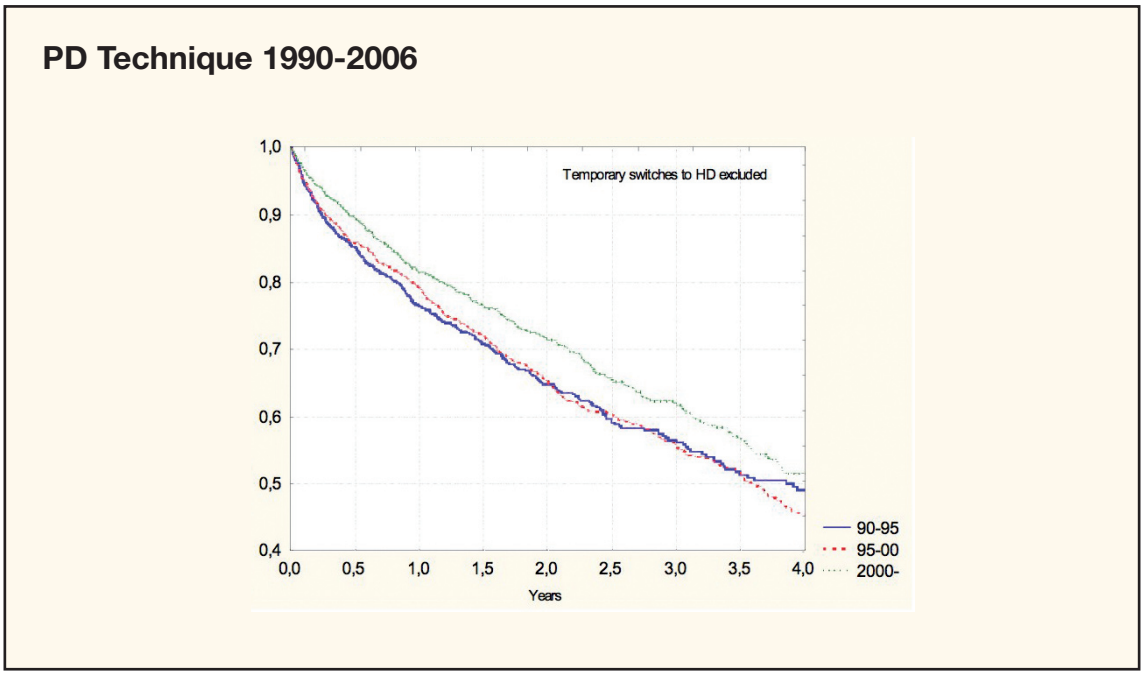

Fig. 2. Two-year Technique survival has improved from 65% to 72%, mainly due to better survival during the first 6 months of therapy.

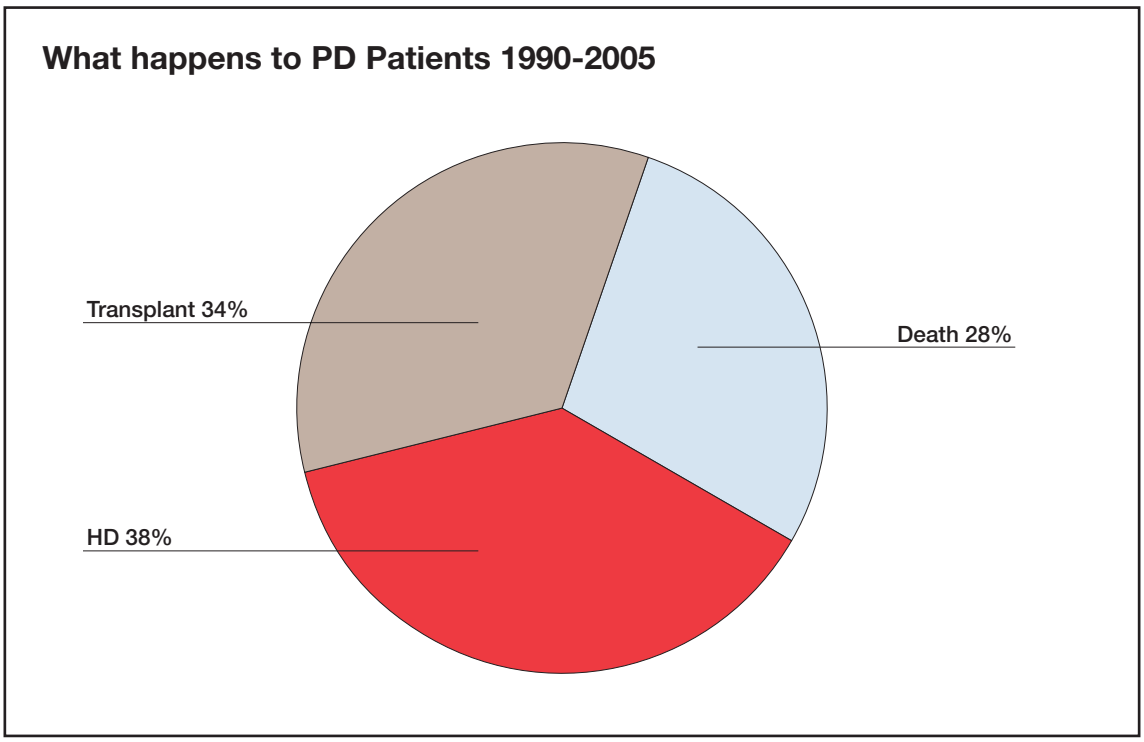

Fig. 3. 28% of patients die while on PD therapy, 34% are transplanted, and 38% are eventually transferred to hemodialysis (i.e. technique failure).

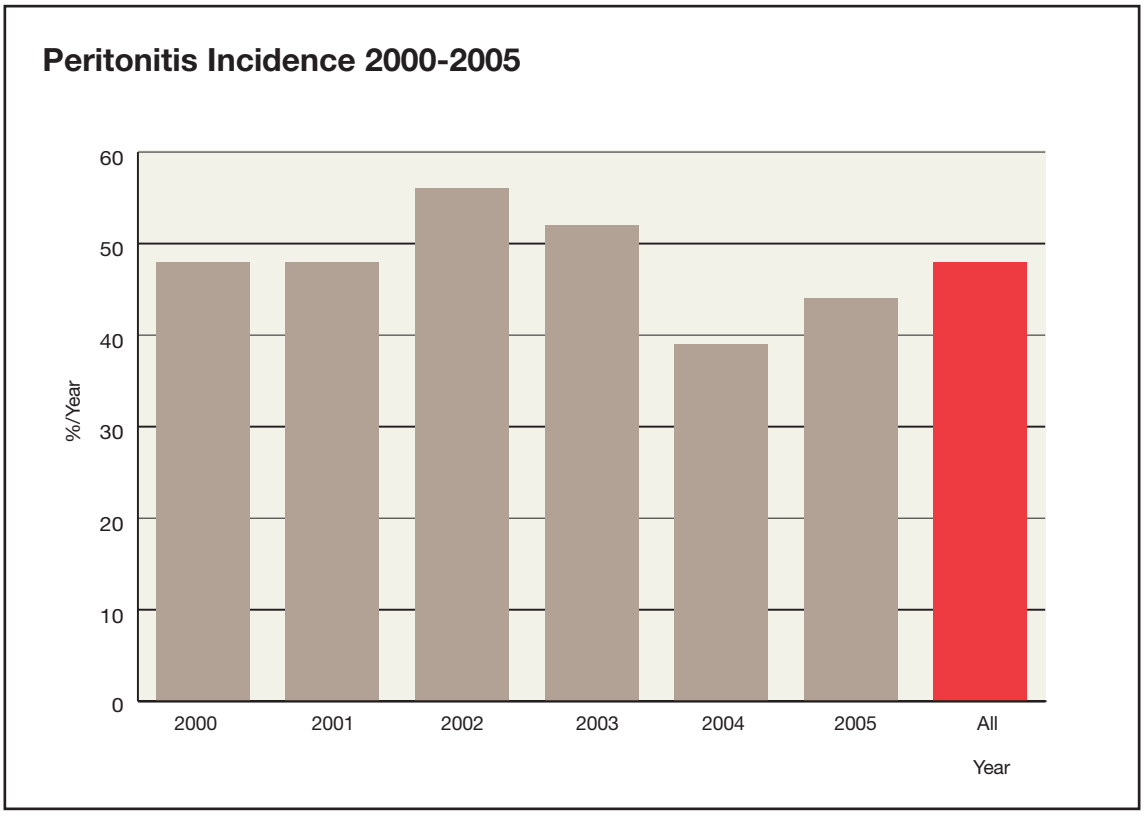

Fig. 4. The peritonitis incidence was constant at about 1 per 25 months.

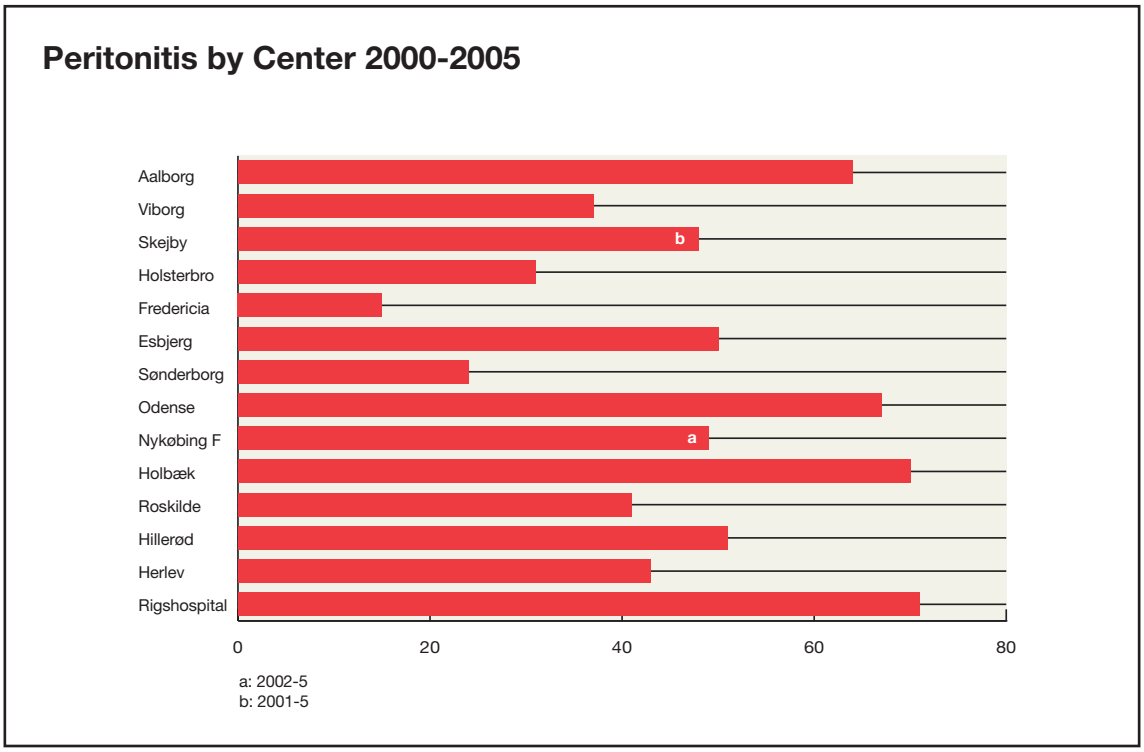

Fig. 5. The peritonitis incidence varied considerably between centers. Censoring the results for the first 3 months of therapy, and thus removing the effects of peritoneal dialysis catheter insertion, only marginally influenced the results.

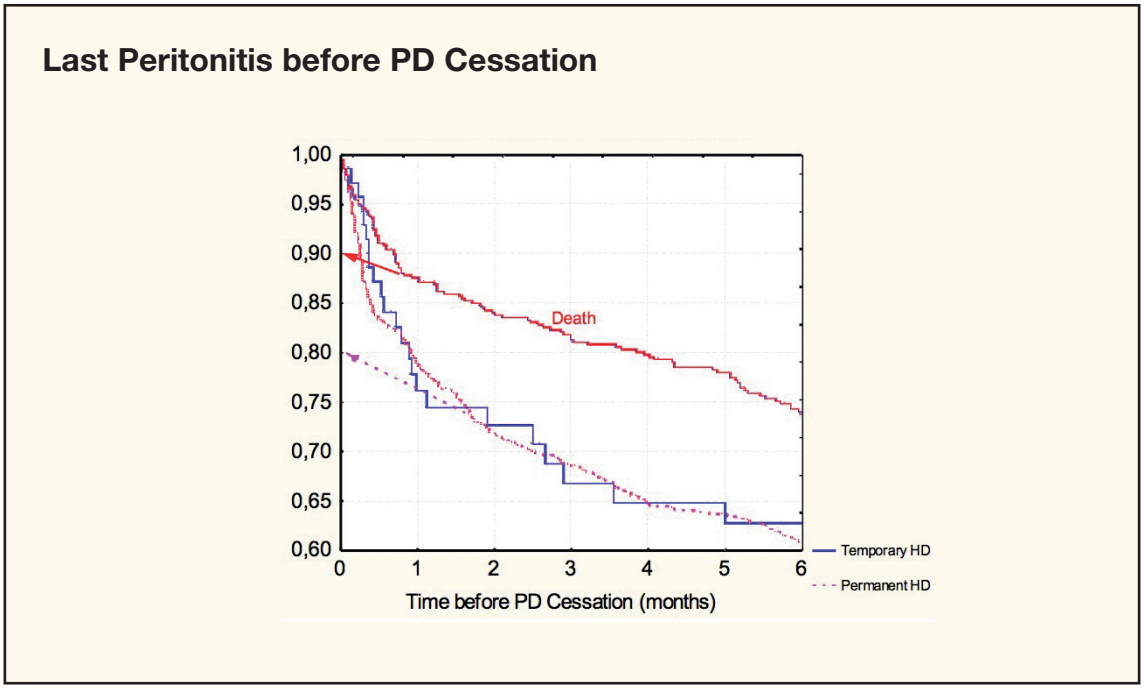

Fig. 6. There was an increased incidence of peritonitis before death and temporary or permanent change to HD, involving 10% and 20% of patients respectively. This suggests that peritonitis is a contributing cause of death in 3% of all PD patients (10% x 28%, see fig. 3), and causes technique failure in 8% (20% x 38%, see fig. 3) of all PD patients.

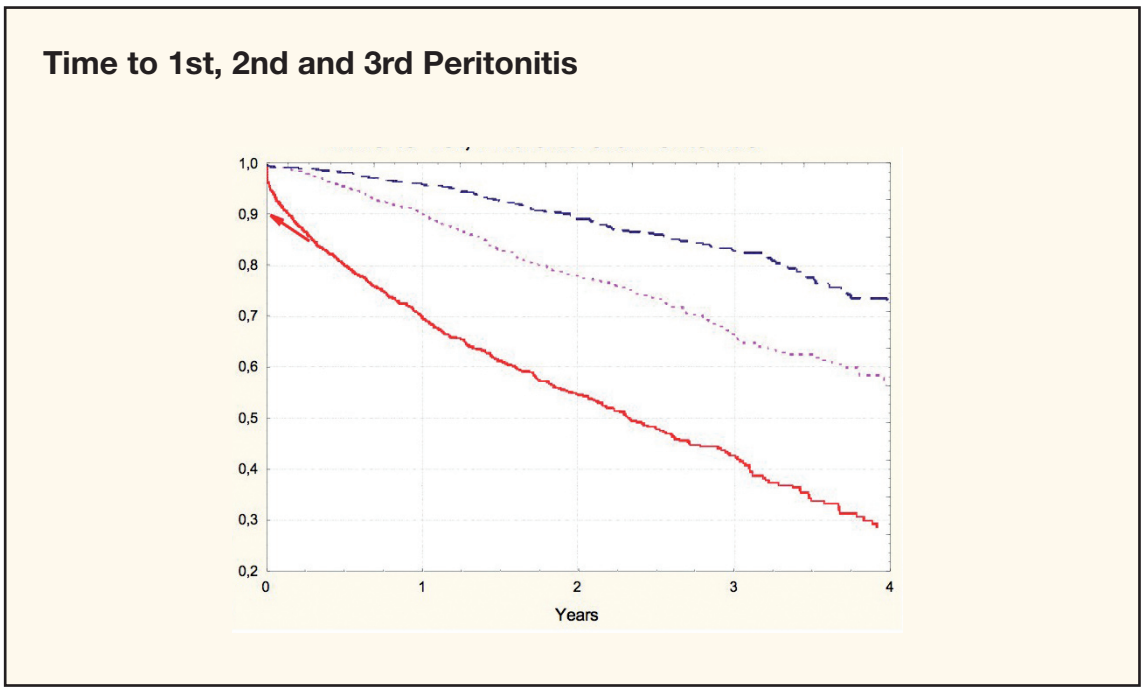

Fig. 7. The median time to first peritonitis was 28 months. 4% of patients developed peritonitis as a complication to catheter insertion. There was an increased risk of peritonitis involving 10% of patients during the first 3 months of therapy, presumably due to operation complications and learning difficulties. After 3 months, the risk of developing a first peritonitis was essentially linear, suggesting that only few patients can be regarded as risk-free.

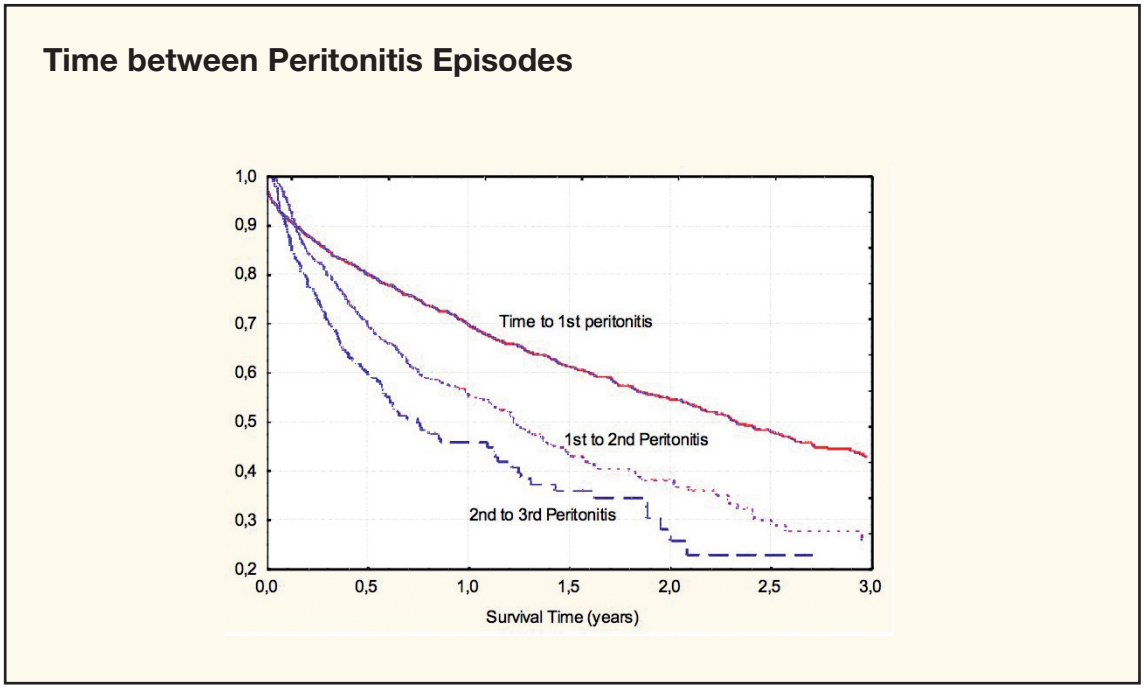

Fig. 8. The median time to first peritonitis was 28 months, from first to second 15 months and from second to third 9 months. The shortening time interval could be due to selection of a high-risk subpopulation, or chronic catheter biofilm infection.

Fig. 9. Peritonitis frequency (number/year). Patients with a satisfactory low peritonitis frequency (<1 per 24 months) remained constant at about 70%.

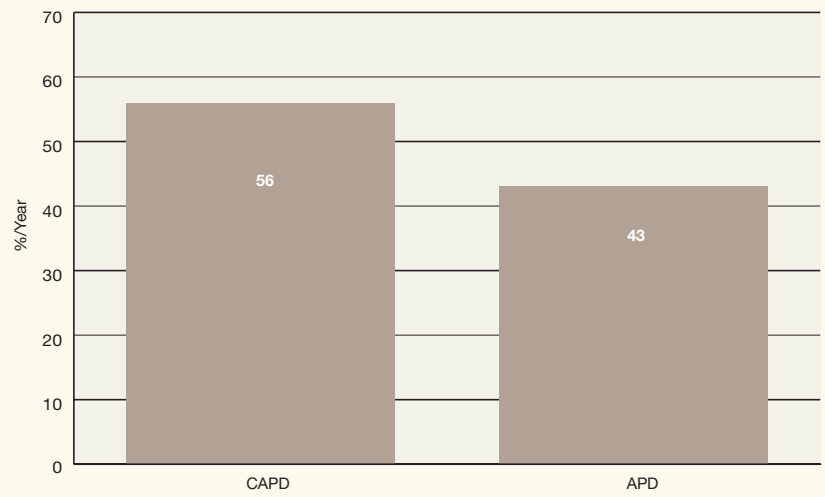

Fig. 10. The risk of peritonitis was 30% higher for CAPD than APD. This may be due to a lower connection frequency with APD.

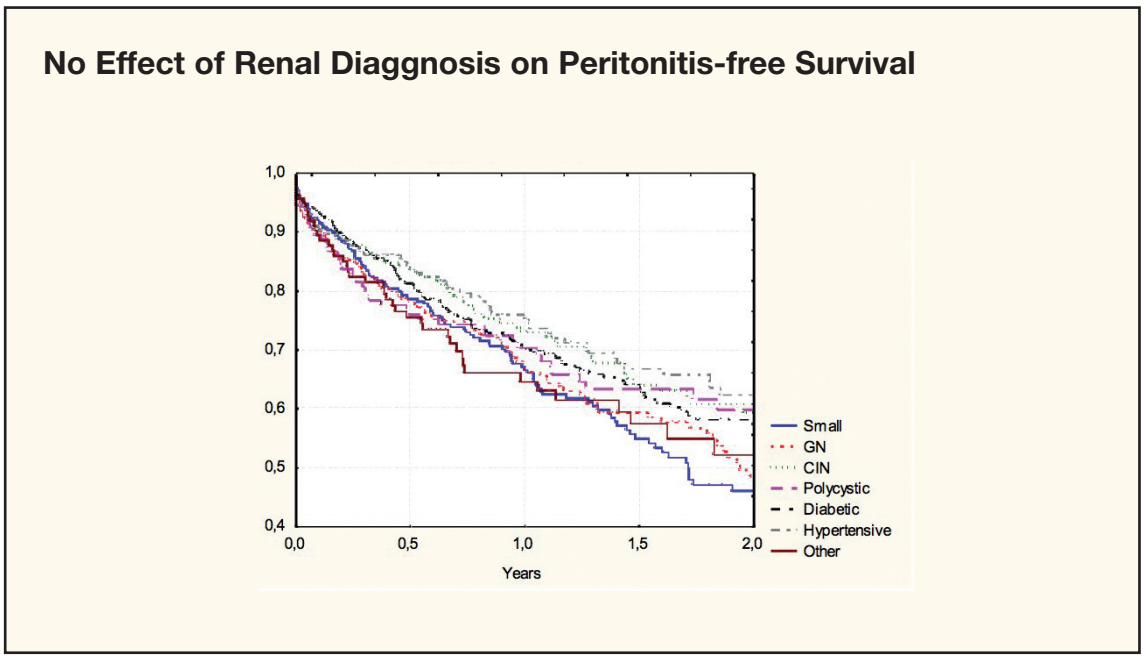

Fig. 11. There was no effect of renal diagnosis on peritonitis frequency.

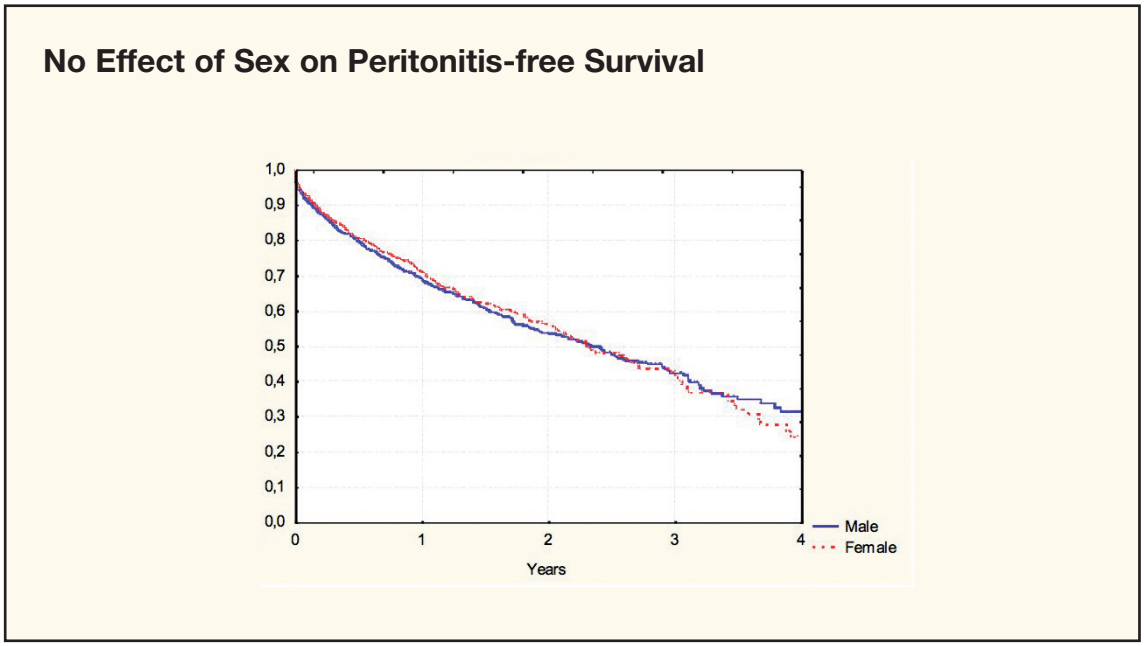

Fig. 12. There was no effect of sex on peritonitis frequency.

Effect of Age on Peritonitis-free Survival

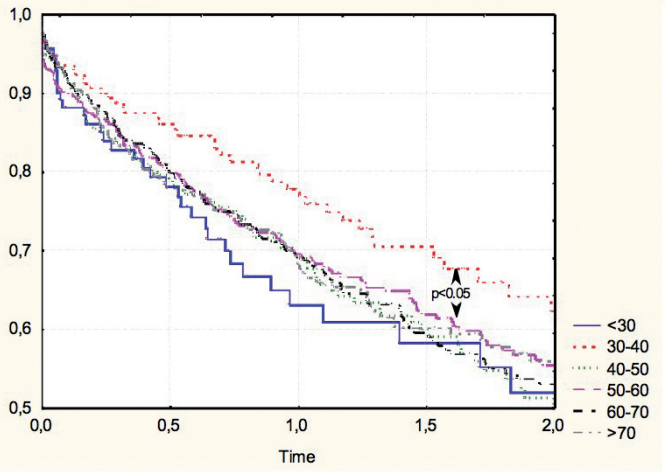

Fig. 13. There was no overall effect of age on peritonitis frequency. A trend to slightly higher frequency in the youngest age group (<30 years), and slightly lower frequency in the 30-40 year age group was noted.

Landsregister for patienter
i aktiv behandling for
kronisk nyresvigt
Rapport for Danmark 2005
ISBN NR 87-7774-161-7
Tryk: Prinfoparitas A/S