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An Overview of Regular Dialysis Treatment in Japan (As of 31 December 2007)

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Abstract: A nationwide statistical survey of 4098 dialysis facilities was conducted at the end of 2007, and 4052 facilities (98.88%) participated. The number of patients undergoing dialysis at the end of 2007 was determined to be 275 242, an increase of 10 769 patients (4.1%) compared with that at the end of 2006.The number of dialysis patients per million at the end of 2007 was 2154. The crude death rate of dialysis patients at the end of 2007 from the end of 2006 was 9.4%. The mean age of new patients begun on dialysis was 66.8 years and the mean age of the entire dialysis patient population was 64.9 years. For the primary diseases of new patients begun on dialysis, the percentages of patients with diabetic nephropathy and chronic glomerulonephritis were 43.4% and 23.8%, respectively. The percentages of facilities that achieved the control standard of endotoxin concentration in the dialysate solution of <0.05 EU/mL and those that achieved a bacterial count of <100 cfu/mL in the dialysate solution, as specified by the Japanese Society for Dialysis Therapy, were 93.6% and 97.4%, respectively. The percentage of patients positive for the hepatitis C virus antibody among the entire dialysis population significantly decreased from 15.95% at the end of 1999 to 9.83% at the end of 2007. The mean hemoglobin concentration in all the dialysis patients at the end of 2007 was 10.27 (±1.32, SD) g/dL, which has scarcely changed over the last three years. The numbers of male and female patients with a history of hip fracture were 142.9 and 339.0 per 10 000 dialysis patients, respectively, showing an extremely high prevalence among female patients. A history of hip fracture correlates with a low body mass index, serum albumin concentration, and a history of diabetes. The serum creatinine level of patients upon introduction to dialysis was 8.34 (±3.55) mg/dL, and the estimated glomerular filtration rate was 5.43 (±3.43) mL/min/1.73 m^2 for the patients who were newly begun on dialysis in 2007. **Key Words:** Clinical condition, Dialysis patient population, Endotoxin concentration, History of fracture, Survey, Survival rate.

The Japanese Society for Dialysis Therapy has been conducting a yearly statistical survey of dialysis facilities across the country since 1968. A nationwide statistical survey of 4098 dialysis facilities was conducted at the end of 2007, and 4052 facilities (98.88%) responded. The number of patients undergoing dialysis at the end of 2007 determined on the basis of the survey results from dialysis facilities was 275 242, an increase of 10 769 patients (4.1%) from the number in 2006. The crude death rate of dialysis patients in 2007 was 9.4%, which is not significantly different from those over the last 10 years (1).

In the first part of this report, we summarize basic data on chronic dialysis patients in Japan at the end of 2007; in the second part, we summarize data obtained from the same survey on the following items: the current status of dialysate solution quality control, hepatitis virus infection, and renal anemia therapy; the patient history of hip fracture; and the clinical conditions of patients at the introduction of

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dialysis. Among them, the history of hip fracture has never been surveyed and is a new survey item.

We used the survey data that were available when this report was being prepared (in November 2008); therefore, the values tabulated in this report are slightly different from those reported in "An Overview of Regular Dialysis in Japan (As of 31 December 2007)" (2), which was published as a rapid report in June 2008.

METHODS

This survey is conducted every year by sending questionnaires to target dialysis facilities. The 4098 facilities surveyed in this study consisted of the member facilities of the Japanese Society for Dialysis Therapy as of 31 December 2007, and additional non-member facilities offering dialysis for patients with chronic kidney diseases. The number of facilities in the present survey increased by 47 (1.2%) from that in the preceding year's survey. The questionnaires were mainly sent and collected by mail; some were also faxed. Moreover, a floppy disk instead of the paper questionnaire was sent to the facilities that had earlier indicated a preference for it.

This survey consisted of two types. One was a facility survey, in which items related to the details of dialysis facilities, such as the number of patients, staff members, and patient stations at individual facilities, were investigated (using the questionnaire referred to as "sheet I"). The other was a patient survey, in which the epidemiological background, treatment conditions, and outcome of treatment of individual dialysis patients were investigated (using the questionnaires referred to as "sheets II, III, and IV").

The collection rate of the questionnaire (sheet I) at the end of 2007 was 98.88% (4052 facilities), which was higher than that for the 2006 survey (98.37%). The number of facilities from which both questionnaires (i.e. facility survey and patient survey) were collected was 3899 facilities (95.14%), which was also higher than that in the 2006 survey (93.98%). In addition, the number of facilities that responded via an electronic file on a floppy disk was 2935 facilities (75.28%), an increase of at least 6% from the 2006 survey.

I. Tabulation of basic data on chronic dialysis patients at the end of 2007

Data on the dialysis patient population dynamics for the year 2007 were tabulated mainly on the basis of the results of the facility survey. The data included the number of new patients begun on dialysis, the number of patients who died, the crude death rate for the year 2007, and the total number of dialysis patients at the end of 2007. The cumulative survival rate after introduction to dialysis was calculated using a life table method (2).

II. Tabulation of data on new items surveyed

The following items were investigated with the survey on the dialysis patient population dynamics: the current status of dialysate solution quality control, hepatitis virus infection, and renal anemia therapy; the history of hip fracture; and the clinical conditions of patients at introduction to dialysis.

RESULTS AND DISCUSSION

I. Tabulation of basic data on chronic dialysis patients at the end of 2007

1. Number of patients

Table 1 shows a summary of the dynamics of the dialysis patient population in Japan at the end of 2007 obtained from the present survey. Only the data on the durations of dialysis and the longest dialysis shown in this table were obtained from the patient survey, whereas the totals of other parameters were obtained from the facility survey.

The total number of dialysis patients in Japan at the end of 2007 was 275 242, as determined from the facility survey. The number of dialysis patients in Japan at the end of 2006 was 264 473, showing an increase of 4.1% (10 769 patients) from the end of 2006 to the end of 2007.

In the 2006 report, the change in the rate of annual increase in the number of dialysis patients at the end of each year (hereafter, the rate of annual increase in the dialysis patient population) was shown in a graph, and it was pointed out that the rate may reach 0% by around 2014. The rate shown in the 2006 report was calculated using the following equation:

Rate of annual increase in the dialysis patient population (%) = (Dialysis patient population at the end of the target year – Dialysis patient population at the end of the previous year) ÷ Dialysis patient population at the end of the previous year (%)

The dialysis patient population at the end of each year, the denominator of the above equation, increases every year by the difference in the patient population between the target and previous years; therefore, the rate of annual increase in the dialysis patient population decreases even if the annual increase in the number of dialysis patients is constant because the dialysis patient population, which is the denominator of the equation, increases every year. If

TABLE 1. *Current status of chronic dialysis therapy in Japan (as of 31 December 2007)*

Number of facilities		4 052	Increase of 67 (1.7%)			
Equipment	Number of patient station	108 583	Increase of 4201 (4.0%)			
Capacity	Simultaneous dialysis (patients)	107 466	Increase of 3893 (3.8%)			
	Maximum accommodation capacity (patients)	364 286	Increase of 13 343 (3.8%)			
Chronic dialysis patients[†]		275 242	Increase of 10 769 (4.1%)			
Daytime dialysis		223 953	(81.4%)			
Nighttime dialysis		41 742	(15.2%)			
Home dialysis		187	(0.1%)			
Peritoneal dialysis		9 362	(3.4%)			
Patients (per million)		2 154.2	Increase of 84.3			
Number of patients newly introduced to dialysis		36 934	Increase of 561 (1.5%)			
Number of deceased patients		25 253	Increase of 1219 (5.1%)			
Duration of dialysis[‡] (years)		Male	Female	Unknown	Total	
0–4		83 516	47 173	19	130 708	(49.4%)
5–9		40 371	25 704	1	66 076	(25.0%)
10–14		18 803	13 467	0	32 270	(12.2%)
15–19		9 108	7 364	0	16 472	(6.2%)
20–24		5 241	4 362	0	9 603	(3.6%)
≥25		5 184	4 042	1	9 227	(3.5%)
Total		162 223	102 112	21	264 356	(100.0%)
Longest dialysis history		39 years, 8 months				

[†]The total number of chronic dialysis patients is the total of the column for the number of patients in sheet I, and does not necessarily agree with the total number of patients counted according to the method of treatment. [‡]The number of dialysis patients was calculated from questionnaire sheets II to IV.

this is correct, the rate of annual increase approaches 0% with increasing dialysis patient population; however, it will never reach 0%.

To demonstrate the above prediction, the increases in the dialysis patient population at the end of each year were calculated. The annual trend is shown in Figure 1a. The annual increase in the dialysis patient population is approximately 10 000, and has tended to decrease over the past 10 years; however, it would still take a long time for the rate of annual increase in the dialysis patient population to reach 0%.

An estimated trend in the annual increase in the number of new patients begun on dialysis (hereafter, the annual increase in the number of new patients) is shown in Figure 1b. The annual increase in the number of new patients is approximately 1000, similarly showing a decreasing trend over the past 10 years.

The number of facilities that responded to the questionnaire at the end of 2007 was 4052, which increased by 67 (1.7%) from the previous year. The number of patient stations at the end of 2007 was 108 583, which increased by 4201 (4.0%) from the previous year. The rates of increase in the number of patient stations and dialysis patients were higher than that in the number of dialysis facilities. This finding indicates that the number of patients treated at one facility has been increasing. The total number of patients who can simultaneously receive dialysis was 107 466, and the maximum capacity of all the

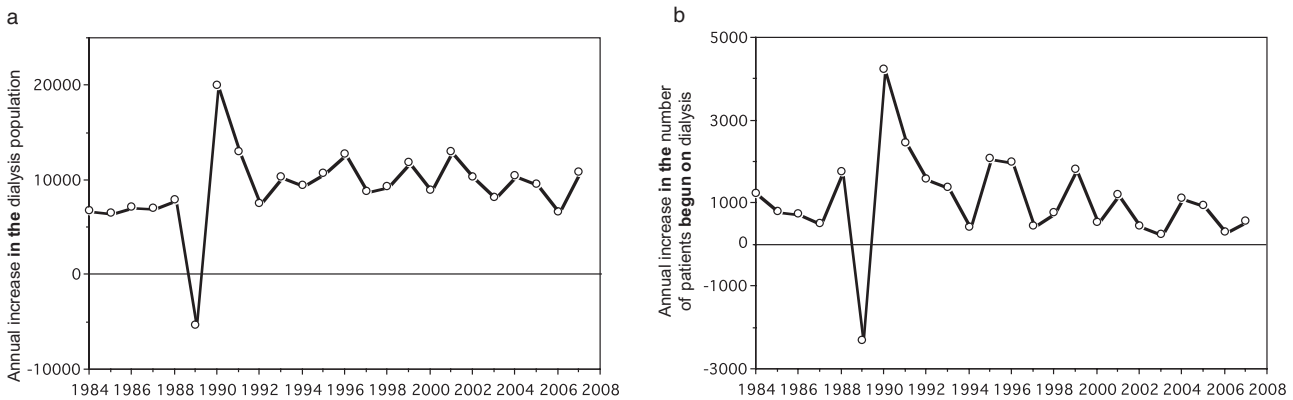

FIG. 1. Changes in the annual increase in (a) the dialysis population, and (b) the number of patients begun on dialysis.

facilities to provide dialysis was 364 286; both numbers increased in 2007.

The percentage of patients who received dialysis during the daytime further increased to 81.4%, whereas those receiving it during the nighttime decreased to 15.2%. The trends of the increasing number of daytime dialysis patients and the decreasing number of nighttime dialysis patients were the same as those in the 2006 survey.

The longest dialysis duration was 39 years and 8 months. The longest dialysis durations in the past 10 years were 31 years at the end of 1997, 32 years at the end of 1998, 33 years at the end of 1999, 34 years at the end of 2000, 35 years and 10 months at the end of 2001, 36 years and 8 months at the end of 2002, 37 years and 6 months at the end of 2003, 37 years and 3 months at the end of 2004, 38 years at the end of 2005, 39 years at the end of 2006, and 39 years and 8 months at the end of 2007. Thus, the longest dialysis duration has increased by approximately one year every survey up to the end of 2003, but the rate of increase in the longest dialysis duration has decreased since 2004. These long-term dialysis patients were begun on dialysis in the early stage of dialysis therapy in Japan; therefore, the above-described finding may indicate that 40 years have passed since these patients were begun on dialysis during this early stage of dialysis therapy and many of them have died of old age.

Table 2 shows the total number of dialysis patients in each prefecture of Japan determined from the facility survey. The number of dialysis patients per million at the end of 2007 was 2154.2 (Table 1). Table 3 shows changes in the number of dialysis patients per million.

2. Mean age

The dialysis patient population in Japan is aging yearly. The patient survey showed that the mean age of new patients begun on dialysis in 2007 was 66.8 years (±13.3, SD, here and throughout), and the mean age of the entire dialysis patient population in 2007 was 64.9 years (±12.7) (Table 4). The dialysis patient population aged by 7.2 years from the end of 1987 to the end of 1997, but aged by 5.6 years from the end of 1997 to the end of 2007. Thus, the rate of aging of the dialysis patient population has decreased. Similarly, the mean age of new patients begun on dialysis increased by 6.3 years from the end of 1987 to the end of 1997, but increased by only 4.6 years from the end of 1997 to the end of 2007. These findings show that the rate of aging of new patients begun on dialysis has also decreased.

Table 5 shows the gender and age distributions of new patients begun on dialysis in 2007. Table 6 shows the gender and age distributions of all dialysis patients in 2007. Tables 7 and 8 show the age distribution according to the primary disease. The data in these tables were obtained from the patient survey.

3. Primary disease of new patients begun on dialysis

Table 7 shows a summary of the primary diseases of new patients begun on dialysis in 2007. Table 8 shows a summary of the primary diseases of all the patients at the end of 2007.

Table 9 shows changes in the percentage of patients according to the main primary disease of renal failure for the new patients begun on dialysis each year. Since 1983, when the patient survey was first conducted, the number of new patients with diabetic nephropathy as the primary disease has continuously increased. In 1998 the number of patients with diabetic nephropathy as the primary disease became the highest among the new patients begun on dialysis, instead of the former top primary disease, chronic glomerulonephritis, and has been continuously increasing. Among the new patients begun on dialysis in 2007, the numbers of patients with diabetic nephropathy and those with chronic glomerulonephritis as the primary diseases were 43.4% and 23.8%, respectively. The number of patients with an "unspecified" primary disease newly begun on dialysis has increased yearly, and the percentage was 10.2% in 2007. Following these three diseases, the percentage of patients with nephrosclerosis as the primary disease has been increasing, accounting for 10.0%. This increase is considered to be related to the aging of the new dialysis patients. The number of patients with polycystic kidney disease, rapidly progressive glomerulonephritis, chronic pyelonephritis, and systemic lupus erythematosus (SLE) nephritis as the primary diseases were also observed, and the percentages of these patients were nearly the same as those in the previous years.

Table 10 shows changes in the percentage of patients according to the primary disease of renal failure for all the dialysis patients each year. Reflecting the trend among new patients begun on dialysis each year, the number of patients with chronic glomerulonephritis as the primary disease of renal failure has continuously decreased yearly. Instead, the number of patients with diabetic nephropathy as the primary disease has continuously increased (chronic glomerulonephritis, 40.4%; diabetic nephropathy, 33.4% in 2007). Assuming that the dynamics of the dialysis patient population in Japan continues to show this trend, the percentage of patients with

TABLE 2. *Numbers of chronic dialysis patients by prefecture*

Names of administrative divisions	Daytime	Nighttime	Home hemodialysis	Peritoneal dialysis	Total†
Hokkaido	11 535	1 438	5	450	13 429
Aomori Prefecture	2 676	221	0	121	3 018
Iwate Prefecture	2 269	360	0	144	2 773
Miyagi Prefecture	3 548	832	0	89	4 469
Akita Prefecture	1 639	145	0	63	1 847
Yamagata Prefecture	1 808	256	0	139	2 204
Fukushima Prefecture	3 641	497	1	230	4 368
Ibaraki Prefecture	5 335	854	1	154	6 344
Tochigi Prefecture	4 326	719	0	62	5 108
Gunma Prefecture	3 949	751	19	133	4 833
Saitama Prefecture	11 355	1 961	0	449	13 784
Chiba Prefecture	9 410	1 851	4	232	11 493
Tokyo	20 771	5 039	9	852	26 665
Kanagawa Prefecture	12 955	2 985	1	524	16 474
Niigata Prefecture	3 402	993	1	139	4 535
Toyama Prefecture	1 837	279	0	67	2 184
Ishikawa Prefecture	1 904	381	0	86	2 372
Fukui Prefecture	1 398	214	1	79	1 691
Yamanashi Prefecture	1 759	210	1	20	1 990
Nagano Prefecture	3 481	646	0	133	4 260
Gifu Prefecture	3 386	613	3	161	4 160
Shizuoka Prefecture	7259	1 355	52	290	8 908
Aichi Prefecture	11 200	3 108	3	573	14 931
Mie Prefecture	2 921	656	9	137	3 717
Shiga Prefecture	1 950	504	2	92	2 555
Kyoto Prefecture	4 091	957	2	170	5 220
Osaka Prefecture	16 707	2 741	9	657	20 154
Hyogo Prefecture	8 798	1 757	3	332	10 896
Nara Prefecture	2 507	222	1	113	2 845
Wakayama Prefecture	2 298	293	0	27	2 619
Tottori Prefecture	993	124	0	116	1 233
Shimane Prefecture	1 140	145	0	87	1 372
Okayama Prefecture	3 398	489	0	243	4 130
Hiroshima Prefecture	5 536	527	0	441	6 504
Yamaguchi Prefecture	2 660	359	0	133	3 152
Tokushima Prefecture	1 954	287	0	178	2 419
Kagawa Prefecture	1 919	247	7	239	2 412
Ehime Prefecture	2 661	439	1	166	3 267
Kochi Prefecture	1 806	202	0	45	2 052
Fukuoka Prefecture	9 729	2 218	1	336	12 283
Saga Prefecture	1 586	289	0	13	1 888
Nagasaki Prefecture	2 828	522	1	136	3 487
Kumamoto Prefecture	4 492	949	0	150	5 591
Oita Prefecture	3 045	361	1	120	3 527
Miyazaki Prefecture	2 804	537	0	55	3 396
Kagoshima Prefecture	4 147	529	2	115	4 792
Okinawa Prefecture	3 140	680	0	71	3 891
Total	223 953	41 742	187	9362	275 242

†The total number of chronic dialysis patients is the total of the column for the number of patients in sheet I, and does not necessarily agree with the total number of patients counted according to the method of treatment. The number of dialysis patients was calculated based on facility survey data.

chronic glomerulonephritis as the primary disease and that with diabetic nephropathy will reverse in a few years; it is considered that the percentage of patients with diabetic nephropathy as the primary disease will become the largest also for all the dialysis patients. Patients with an unspecified primary disease accounted for 7.4% of all the dialysis patients. Following these three diseases, nephrosclerosis had the fourth largest number of patients.

4. Causes of death

Table 11 shows the classification of the causes of death of new patients who were begun on dialysis in 2007 and who died by the end of 2007. Table 12 shows the classification of the causes of death of patients who died in 2007 in the entire dialysis patient population. Table 13 shows the changes in the percentages of the leading causes of death in the entire dialysis patient population. The classification of the causes of

TABLE 3. *Changes in the number of patients per million*

Year	Patients per million	Year	Patients per million
1983	443.7	1996	1328.4
1984	497.5	1997	1394.9
1985	547.8	1998	1472.5
1986	604.4	1999	1556.7
1987	658.8	2000	1624.1
1988	721.1	2001	1721.9
1989†	790.0	2002	1801.2
1990	835.7	2003	1862.7
1991	937.6	2004	1943.5
1992	995.8	2005	2017.6
1993	1076.4	2006	2069.9
1994	1149.4	2007	2154.2
1995	1229.7		

†The collection rate is corrected at 86%, that is, rounded off at the 100th order. The number of dialysis patients was calculated based on facility survey data.

death was changed on the basis of the tenth revision of the international statistical classification of diseases and related health problems (ICD-10) starting with the survey at the end of 2003.

The causes of death of new patients begun on dialysis in 2007 were infectious diseases (24.2%), cardiac failure (23.2%), malignant tumors (10.3%), cerebrovascular disorder (5.5%), and cardiac infarction (3.5%). The major cause of death of new patients begun on dialysis was cardiac failure until 2002. The percentage of dialysis patients who died of infectious diseases has increased and become as large as that of dialysis patients who died of cardiac failure since 2003; this trend has continued until 2007. The increases in the numbers of elderly patients and diabetic patients who easily develop infectious diseases are considered to account for the increasing percentage of patients who died of infectious diseases.

The leading cause of death among the entire dialysis patient population was cardiac failure, accounting for 24.0% of all the patients who died. The percentage of death from cardiac failure among all the patients who died decreased between 1990 and around 1996, and remained nearly constant afterwards. The second leading cause of death was infectious diseases, accounting for 18.9% of all the patients who died. The percentage of death from infectious diseases has tended to increase since 1990. These trends were similar to those observed for the causes of death of new patients begun on dialysis, which was mentioned above.

Following the causes of death mentioned above, the percentages of patients who died of cerebrovascular disorder and malignant tumors were high, at 8.9% and 9.2%, respectively. The percentage of patients who died of cerebrovascular disorder has tended to decrease since 1994; moreover, the percentage of patients who died of cardiac infarction has also tended to decrease since 2002.

5. Annual crude death rate

The annual crude death rate was calculated from the facility survey data. It shows the percentage of the number of patients who died in a given year with respect to the mean annual number of dialysis patients. The annual crude death rate in 2007 was 9.4%. Table 14 shows the trend of annual crude death rates from 1983, which have ranged between 9.2–9.7% since 1992. Despite the increase in the numbers of diabetic patients, who have a low life expectancy, and elderly patients, the annual crude death rate remains nearly constant, which suggests an improvement in dialysis control technology in Japan.

6. Cumulative survival rate of new patients begun on dialysis each year

The cumulative survival rates of new patients begun on dialysis from 1983 are summarized by the year of introduction (Table 15). Moreover, the 1-, 5-, 10-, 15-, and 20-year survival rates of patients begun on dialysis are extracted from the table and plotted in

TABLE 4. *Changes in the mean age of new patients begun on dialysis and in that of patients at the end of each year*

	Mean age of patients newly begun on dialysis treatment		Mean age of patients at the end of each year	
Year	Mean	±SD	Mean	±SD
1983	51.9	15.5	48.3	13.8
1984	53.2	15.3	49.2	13.8
1985	54.4	15.4	50.3	13.7
1986	55.1	15.2	51.1	13.6
1987	55.9	14.9	52.1	13.7
1988	56.9	14.9	52.9	13.6
1989	57.4	14.7	53.8	13.5
1990	58.1	14.6	54.5	13.5
1991	58.1	14.6	55.3	13.5
1992	59.5	14.5	56.0	13.5
1993	59.8	14.4	56.6	13.5
1994	60.4	14.3	57.3	13.5
1995	61.0	14.2	58.0	13.4
1996	61.5	14.2	58.6	13.4
1997	62.2	14.0	59.2	13.4
1998	62.7	13.9	59.9	13.3
1999	63.4	13.9	60.6	13.3
2000	63.8	13.9	61.2	13.2
2001	64.2	13.7	61.6	13.1
2002	64.7	13.6	62.2	13.0
2003	65.4	13.5	62.8	12.9
2004	65.8	13.4	63.3	12.9
2005	66.2	13.4	63.9	12.8
2006	66.4	13.4	64.4	12.8
2007	66.8	13.3	64.9	12.7

TABLE 5. *Number of new patients begun on dialysis in 2007 according to age and gender*

Age of the patients when newly begun on dialysis (years)	Male	(%)†	Female	(%)†	Subtotal	(%)†	No information available	Total	(%)†
<5	9	(0.0)	10	(0.1)	19	(0.1)	0	19	(0.1)
5–9	6	(0.0)	4	(0.0)	10	(0.0)	0	10	(0.0)
10–14	12	(0.1)	6	(0.0)	18	(0.0)	0	18	(0.0)
15–19	20	(0.1)	12	(0.1)	32	(0.1)	0	32	(0.1)
20–24	71	(0.3)	34	(0.3)	105	(0.3)	0	105	(0.3)
25–29	120	(0.5)	69	(0.5)	189	(0.5)	0	189	(0.5)
30–34	247	(1.1)	123	(1.0)	370	(1.0)	0	370	(1.0)
35–39	464	(2.0)	215	(1.7)	679	(1.9)	0	679	(1.9)
40–44	671	(2.9)	253	(2.0)	924	(2.6)	0	924	(2.6)
45–49	989	(4.2)	419	(3.3)	1 408	(3.9)	0	1 408	(3.9)
50–54	1 458	(6.2)	611	(4.8)	2 069	(5.7)	0	2 069	(5.7)
55–59	2 819	(12.0)	1 187	(9.4)	4 006	(11.1)	1	4 007	(11.1)
60–64	2 852	(12.2)	1 272	(10.0)	4 124	(11.4)	3	4 127	(11.4)
65–69	3 281	(14.0)	1 639	(12.9)	4 920	(13.6)	7	4 927	(13.7)
70–74	3 775	(16.1)	1 947	(15.4)	5 722	(15.9)	2	5 724	(15.9)
75–79	3 372	(14.4)	2 067	(16.3)	5 439	(15.1)	1	5 440	(15.1)
80–84	2 221	(9.5)	1 671	(13.2)	3 892	(10.8)	0	3 892	(10.8)
85–89	832	(3.6)	890	(7.0)	1 722	(4.8)	1	1 723	(4.8)
90–94	152	(0.6)	216	(1.7)	368	(1.0)	0	368	(1.0)
≥95	26	(0.1)	24	(0.2)	50	(0.1)	0	50	(0.1)
Total	23 397	(100.0)	12 669	(100.0)	36 066	(100.0)	15	36 081	(100.0)
No information available	60		32		92			92	
Total	23 457		12 701		36 158		15	36 173	
Mean	65.84		68.60		66.81		67.73	66.81	
SD	13.07		13.55		13.31		7.40	13.30	

†The value in parentheses on the right-hand side of each number is the percentage of patients with respect to the total of the column.

TABLE 6. *Number of all dialysis patients in 2007 according to age and gender*

Age (years)	Male	(%)†	Female	(%)†	Subtotal	(%)†	No information available	Total	(%)†
<5	21	(0.0)	20	(0.0)	41	(0.0)	0	41	(0.0)
5–9	18	(0.0)	14	(0.0)	32	(0.0)	0	32	(0.0)
10–14	19	(0.0)	14	(0.0)	33	(0.0)	0	33	(0.0)
15–19	77	(0.0)	49	(0.0)	126	(0.0)	0	126	(0.0)
20–24	291	(0.2)	167	(0.2)	458	(0.2)	0	458	(0.2)
25–29	713	(0.4)	400	(0.4)	1 113	(0.4)	0	1 113	(0.4)
30–34	1 859	(1.1)	969	(0.9)	2 828	(1.1)	0	2 828	(1.1)
35–39	3 575	(2.2)	1 832	(1.8)	5 407	(2.0)	0	5 407	(2.0)
40–44	5 400	(3.3)	2 786	(2.7)	8 186	(3.1)	0	8 186	(3.1)
45–49	7 783	(4.8)	4 233	(4.1)	12 016	(4.5)	1	12 017	(4.5)
50–54	12 364	(7.6)	7 053	(6.9)	19 417	(7.3)	1	19 418	(7.3)
55–59	22 862	(14.1)	13 142	(12.9)	36 004	(13.6)	2	36 006	(13.6)
60–64	23 361	(14.4)	13 576	(13.3)	36 937	(14.0)	2	36 939	(14.0)
65–69	24 719	(15.2)	14 793	(14.5)	39 512	(14.9)	9	39 521	(15.0)
70–74	24 225	(14.9)	14 633	(14.3)	38 858	(14.7)	3	38 861	(14.7)
75–79	18 799	(11.6)	12 837	(12.6)	31 636	(12.0)	2	31 638	(12.0)
80–84	10 874	(6.7)	9 437	(9.2)	20 311	(7.7)	0	20 311	(7.7)
85–89	4 115	(2.5)	4 663	(4.6)	8 778	(3.3)	1	8 779	(3.3)
90–94	1 005	(0.6)	1 334	(1.3)	2 339	(0.9)	0	2 339	(0.9)
≥95	139	(0.1)	158	(0.2)	297	(0.1)	0	297	(0.1)
Total	162 219	(100.0)	102 110	(100.0)	264 329	(100.0)	21	264 350	(100.0)
No information available	4		2		6			6	
Total	162 223		102 112		264 335		21	264 356	
Mean	64.16		65.98		64.87		66.33	64.87	
SD	12.52		12.92		12.71		8.51	12.71	

†The value in parentheses on the right-hand side of each number is the percentage of patients with respect to the total of the column.

TABLE 7. *Number of new patients begun on dialysis in 2007 (and their mean ages) according to primary disease*

Primary disease	Number of patients	(%)†	No information available	(%)†	Total	(%)†	Mean age	SD
Chronic glomerulonephritis	8 561	(23.8)	41	(45.1)	8 602	(23.8)	66.45	14.31
Chronic pyelonephritis	278	(0.8)	2	(2.2)	280	(0.8)	64.42	15.06
Rapidly progressive glomerulonephritis	468	(1.3)	0	(0.0)	468	(1.3)	69.99	14.30
Nephropathy of pregnancy/pregnancy toxemia	68	(0.2)	0	(0.0)	68	(0.2)	57.56	13.60
Other nephritides that cannot be classified	148	(0.4)	0	(0.0)	148	(0.4)	61.32	20.35
Polycystic kidney	827	(2.3)	0	(0.0)	827	(2.3)	61.31	13.41
Nephrosclerosis	3 621	(10.1)	5	(5.5)	3 626	(10.0)	73.67	11.54
Malignant hypertension	248	(0.7)	0	(0.0)	248	(0.7)	61.10	16.56
Diabetic nephropathy	15 663	(43.5)	18	(19.8)	15 681	(43.4)	65.44	11.49
Systemic lupus erythematosus nephritis	302	(0.8)	4	(4.4)	306	(0.8)	60.50	15.67
Amyloidal kidney	170	(0.5)	0	(0.0)	170	(0.5)	68.20	9.28
Gouty kidney	107	(0.3)	1	(1.1)	108	(0.3)	65.82	12.60
Renal failure due to congenital abnormality of metabolism	33	(0.1)	0	(0.0)	33	(0.1)	47.24	21.85
Kidney and urinary tract tuberculosis	22	(0.1)	0	(0.0)	22	(0.1)	72.23	9.95
Kidney and urinary tract stone	67	(0.2)	0	(0.0)	67	(0.2)	68.36	12.52
Kidney and urinary tract tumor	162	(0.4)	1	(1.1)	163	(0.5)	70.96	11.82
Obstructive urinary tract disease	99	(0.3)	1	(1.1)	100	(0.3)	66.89	16.22
Myeloma	140	(0.4)		(0.0)	140	(0.4)	70.40	9.33
Hypoplastic kidney	59	(0.2)	1	(1.1)	60	(0.2)	35.14	27.81
Undetermined	3 664	(10.2)	9	(9.9)	3 673	(10.2)	69.84	13.43
Reintroduction after transplantation	273	(0.8)	4	(4.4)	277	(0.8)	56.67	17.28
Others	1 037	(2.9)	4	(4.4)	1 041	(2.9)	67.47	15.25
Total	36 017	(100.0)	91	(100.0)	36 108	(100.0)	66.80	13.31
No information available	64		1		65		70.53	11.65
Total	36 081		92		36 173		66.81	13.30

†The value in parentheses on the right-hand side of each number is the percentage of patients with respect to the total of the column.

Figure 2. The survival rates were calculated using a life table method (3).

The 1- to 10-year survival rates have been increasing since 1992 for patients begun on dialysis in 1992 or later. A significant change employed from around 1992 was the start of the clinical application of erythropoietin. This trend of increasing survival rate for the patients begun on dialysis after 1992 may be due to the improvement of anemia therapy using erythropoietin from the initial phase of dialysis.

The 15-year survival rate of patients begun on dialysis after 1992 is still unclear because only the data from the patients begun on dialysis before 1992 are used for calculating the 15-year survival rate. It will be interesting to determine whether the survival rates for 15 years and longer will also increase for the patients begun on dialysis after 1992.

II. Tabulation of data on new items surveyed

A. Current status of dialysate solution quality control

Following the previous survey, the surveyed items included the measurement frequency and endotoxin concentration in the dialysate solution, measurement frequency and bacterial count in the dialysate solution, the medium used for bacterial cultivation of dialysate solution, and the installation of endotoxin retentive filters (ETRFs). The amount of the sample for the measurement of bacterial count in the dialysate solution was also added to these items in the present survey.

1. Measurement of endotoxin concentration in dialysate solution

a. Measurement frequency. There were 3664 facilities that responded to questions regarding the measurement frequency of endotoxin concentration in the dialysate solution (Table 16). The endotoxin concentration in the dialysate solution was measured at 87.5% of the facilities that responded to the questionnaire, an increase of 5% from the percentage in the 2006 survey. According to the quality control standard by the Japanese Society for Dialysis Therapy, it is recommended that the endotoxin concentration in the dialysate solution be measured more than once a month; however, the percentage of facilities that carried out the measurement more than once a month was only 31.5%, indicating that compliance with the recommendation needs improvement.

TABLE 8. *Number of all dialysis patients in 2007 (and their mean ages) according to primary disease*

Primary disease	Number of patients	(%)†	No information available	(%)†	Total	(%)†	Mean age	SD
Chronic glomerulonephritis	106 702	(40.4)	2	(33.3)	106 704	(40.4)	63.50	12.84
Chronic pyelonephritis	3 138	(1.2)	0	(0.0)	3 138	(1.2)	62.83	14.26
Rapidly progressive glomerulonephritis	1 742	(0.7)	0	(0.0)	1 742	(0.7)	64.95	14.30
Nephropathy of pregnancy/pregnancy toxemia	1 775	(0.7)	0	(0.0)	1 775	(0.7)	59.71	9.96
Other nephritides that cannot be classified	1 214	(0.5)	0	(0.0)	1 214	(0.5)	58.05	17.03
Polycystic kidney	8 920	(3.4)	0	(0.0)	8 920	(3.4)	62.93	11.03
Nephrosclerosis	17 144	(6.5)	0	(0.0)	17 144	(6.5)	72.91	11.96
Malignant hypertension	1 956	(0.7)	0	(0.0)	1 956	(0.7)	62.55	14.41
Diabetic nephropathy	88 257	(33.4)	1	(16.7)	88 258	(33.4)	65.69	10.96
Systemic lupus erythematosus nephritis	2 261	(0.9)	0	(0.0)	2 261	(0.9)	56.85	13.77
Amyloidal kidney	513	(0.2)	0	(0.0)	513	(0.2)	65.47	11.26
Gouty kidney	1 256	(0.5)	1	(16.7)	1 257	(0.5)	65.56	11.61
Renal failure due to congenital abnormality of metabolism	262	(0.1)	0	(0.0)	262	(0.1)	47.31	17.90
Kidney and urinary tract tuberculosis	392	(0.1)	0	(0.0)	392	(0.1)	69.59	9.68
Kidney and urinary tract stone	552	(0.2)	0	(0.0)	552	(0.2)	68.23	11.43
Kidney and urinary tract tumor	644	(0.2)	0	(0.0)	644	(0.2)	69.18	12.08
Obstructive urinary tract disease	692	(0.3)	0	(0.0)	692	(0.3)	60.76	18.23
Myeloma	207	(0.1)	0	(0.0)	207	(0.1)	70.06	10.78
Hypoplastic kidney	548	(0.2)	0	(0.0)	548	(0.2)	39.73	19.41
Undetermined	19 451	(7.4)	2	(33.3)	19 453	(7.4)	67.14	13.42
Reintroduction after transplantation	1 894	(0.7)	0	(0.0)	1 894	(0.7)	52.98	12.79
Others	4 725	(1.8)	0	(0.0)	4 725	(1.8)	62.66	16.11
Total	264 245	(100.0)	6	(100.0)	264 251	(100.0)	64.87	12.71
No information available	105		0		105		68.05	12.39
Total	264 350		6		264 356		64.87	12.71

†The value in parentheses on the right-hand side of each number is the percentage of patients with respect to the total of the column.

b. Dialysate solution endotoxin concentration. Measured endotoxin concentrations in the dialysate solution were obtained from 3186 facilities (Table 17). The quality control standard of endotoxin concentration in the dialysate solution reported by the Japanese Society for Dialysis Therapy is <0.05 EU/mL. The percentage of facilities that satisfied this standard was 93.6%, an increase of approximately 5%

TABLE 9. *Changes in the percentage of new patients begun on dialysis each year in terms of primary disease*

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Diabetic nephropathy	15.6	17.4	19.6	21.3	22.1	24.3	26.5	26.2	28.1	28.4	29.9	30.7	31.9
Chronic glomerulonephritis	60.5	58.7	56.0	54.8	54.2	49.9	47.4	46.1	44.2	42.2	41.4	40.5	39.4
Nephrosclerosis	3.0	3.3	3.5	3.7	3.9	3.9	4.1	5.4	5.5	5.9	6.2	6.1	6.3
Polycystic kidney	2.8	2.8	3.1	2.9	3.2	3.1	3.1	2.9	3.0	2.7	2.6	2.5	2.4
Chronic pyelonephritis	2.4	2.2	2.1	2.0	1.8	1.8	1.5	1.5	1.7	1.6	1.1	1.4	1.2
Rapidly progressive glomerulonephritis	0.9	0.7	0.9	1.0	0.8	0.9	0.8	0.7	0.6	0.7	0.8	0.8	0.8
Systemic lupus erythematosus nephritis	1.1	1.1	1.1	1.2	0.9	0.9	1.0	1.1	1.3	1.3	1.2	1.2	1.1
Undetermined	4.4	4.0	4.8	4.2	4.1	3.8	4.0	3.3	3.7	3.7	3.3	3.9	4.5

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Diabetic nephropathy	33.1	33.9	35.7	36.2	36.6	38.1	39.1	41.0	41.3	42.0	42.9	43.4
Chronic glomerulonephritis	38.9	36.6	35.0	33.6	32.5	32.4	31.9	29.1	28.1	27.4	25.6	23.8
Nephrosclerosis	6.4	6.8	6.7	7.0	7.6	7.6	7.8	8.5	8.8	9.0	9.4	10.0
Polycystic kidney	2.5	2.4	2.4	2.2	2.4	2.3	2.4	2.3	2.7	2.3	2.4	2.3
Chronic pyelonephritis	1.1	1.2	1.1	1.1	1.0	1.1	0.9	1.0	0.9	1.0	0.8	0.8
Rapidly progressive glomerulonephritis	0.8	1.1	0.9	0.9	1.0	1.0	1.1	1.2	1.1	1.1	1.2	1.3
Systemic lupus erythematosus nephritis	1.3	1.0	1.1	1.2	0.9	1.0	0.9	0.7	0.8	0.8	0.8	0.8
Undetermined	5.0	5.5	5.6	6.1	7.6	9.0	8.4	8.8	9.3	9.5	9.9	10.2

TABLE 10. *Changes in the percentage of patients at the end of each year in terms of primary disease*

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Diabetic nephropathy	7.4	8.4	9.4	10.5	11.7	12.8	14.0	14.9	16.4	17.1	18.2	19.2	20.4
Chronic glomerulonephritis	74.5	72.1	72.3	70.6	69.4	67.9	65.9	64.1	61.7	60.4	58.8	57.7	56.6
Nephrosclerosis	1.5	1.7	1.9	2.0	2.1	2.1	2.3	2.6	2.9	3.1	3.4	3.6	3.8
Polycystic kidney	2.7	2.9	3.0	3.1	3.1	3.2	3.2	3.3	3.3	3.3	3.3	3.2	3.2
Chronic pyelonephritis	3.1	3.3	2.6	2.4	2.4	2.3	2.2	2.2	2.1	2.0	1.9	1.8	1.7
Rapidly progressive glomerulonephritis	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Systemic lupus erythematosus nephritis	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.1	1.1	1.1	1.1	1.1
Undetermined	2.2	2.3	2.3	2.5	2.6	2.5	2.6	2.6	2.9	2.9	2.9	3.1	3.2

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Diabetic nephropathy	21.6	22.7	24.0	25.1	26.0	27.2	28.1	29.2	30.2	31.4	32.3	33.4
Chronic glomerulonephritis	55.4	54.1	52.5	51.1	49.7	49.6	48.2	46.6	45.1	43.6	42.2	40.4
Nephrosclerosis	4.0	4.2	4.4	4.5	4.8	5.0	5.1	5.3	5.7	5.9	6.2	6.5
Polycystic kidney	3.2	3.2	3.2	3.2	3.2	3.3	3.3	3.3	3.4	3.3	3.4	3.4
Chronic pyelonephritis	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.2
Rapidly progressive glomerulonephritis	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7
Systemic lupus erythematosus nephritis	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9
Undetermined	3.6	3.9	4.2	4.4	5.0	5.6	5.9	6.3	6.4	6.6	7.0	7.4

from that in the 2006 survey. The percentage of facilities that satisfied the endotoxin concentration of <0.001 EU/mL, which is required for an ultrapure dialysate solution, was 53.0%, a marked increase from 29.8% in the 2006 survey, showing a considerable improvement in solution cleanliness.

2. *Bacterial test of dialysate solution*

a. Measurement frequency. There were 3441 facilities that responded to questions regarding the frequency of the bacterial test of the dialysate solution (Table 18). The test was carried out at 50.1% of these facilities, showing a marked increase from 37.1% at the end of 2006. In accordance with the quality control standard by the Japanese Society for Dialysis Therapy, it is recommended to measure the bacterial count in the dialysate solution more than once a month; however, the percentage of facilities that carried out the test more than once a month was only 16.9%, indicating the need to improve the practice of carrying out bacterial tests as a routine task.

TABLE 11. *Classification of the causes of death of new patients begun on dialysis in 2007*

Cause of death	Male	(%)	Female	(%)	Total	(%)	No information available	Total	(%)
Cardiac failure	460	(22.9)	260	(23.9)	720	(23.2)	0	720	(23.2)
Cerebrovascular disease	102	(5.1)	69	(6.3)	171	(5.5)	0	171	(5.5)
Infectious disease	479	(23.8)	270	(24.8)	749	(24.2)	0	749	(24.2)
Hemorrhage	59	(2.9)	26	(2.4)	85	(2.7)	0	85	(2.7)
Malignant tumor	239	(11.9)	80	(7.3)	319	(10.3)	0	319	(10.3)
Cachexia/uremia	62	(3.1)	51	(4.7)	113	(3.6)	0	113	(3.6)
Cardiac infarction	68	(3.4)	42	(3.9)	110	(3.5)	0	110	(3.5)
Potassium poisoning/moribund	55	(2.7)	30	(2.8)	85	(2.7)	0	85	(2.7)
Chronic hepatitis/cirrhosis	44	(2.2)	10	(0.9)	54	(1.7)	0	54	(1.7)
Encephalopathy	2	(0.1)	3	(0.3)	5	(0.2)	0	5	(0.2)
Suicide/refusal of treatment	23	(1.1)	6	(0.6)	29	(0.9)	0	29	(0.9)
Intestinal obstruction	9	(0.4)	13	(1.2)	22	(0.7)	0	22	(0.7)
Lung thrombus/pulmonary embolus	7	(0.3)	2	(0.2)	9	(0.3)	0	9	(0.3)
Death due to disaster	10	(0.5)	2	(0.2)	12	(0.4)	0	12	(0.4)
Others	229	(11.4)	117	(10.7)	346	(11.2)	0	346	(11.2)
Undetermined	162	(8.1)	108	(9.9)	270	(8.7)	0	270	(8.7)
Total	2010	(100.0)	1089	(100.0)	3099	(100.0)	0	3099	(100.0)
No information available			1		1		0	1	
Total	2010		1090		3100		0	3100	

TABLE 12. *Classification of the causes of death of patients who died in 2007*

Cause of death	Male	(%)	Female	(%)	Total	(%)	No information available	Total	(%)
Cardiac failure	3 387	(22.5)	2333	(26.5)	5 720	(24.0)	1	5 721	(24.0)
Cerebrovascular disease	1 288	(8.6)	841	(9.6)	2 129	(8.9)	0	2 129	(8.9)
Infectious disease	2 879	(19.1)	1637	(18.6)	4 516	(18.9)	1	4 517	(18.9)
Hemorrhage	304	(2.0)	179	(2.0)	483	(2.0)	0	483	(2.0)
Malignant tumor	1 558	(10.4)	626	(7.1)	2 184	(9.2)	0	2 184	(9.2)
Cachexia/uremia	430	(2.9)	318	(3.6)	748	(3.1)	0	748	(3.1)
Cardiac infarction	704	(4.7)	344	(3.9)	1 048	(4.4)	0	1 048	(4.4)
Potassium poisoning/moribund	809	(5.4)	394	(4.5)	1 203	(5.0)	0	1 203	(5.0)
Chronic hepatitis/cirrhosis	209	(1.4)	82	(0.9)	291	(1.2)	0	291	(1.2)
Encephalopathy	12	(0.1)	10	(0.1)	22	(0.1)	0	22	(0.1)
Suicide/refusal of treatment	154	(1.0)	58	(0.7)	212	(0.9)	0	212	(0.9)
Intestinal obstruction	144	(1.0)	100	(1.1)	244	(1.0)	0	244	(1.0)
Lung thrombus/pulmonary embolus	44	(0.3)	38	(0.4)	82	(0.3)	0	82	(0.3)
Death due to disaster	120	(0.8)	56	(0.6)	176	(0.7)	0	176	(0.7)
Others	1 428	(9.5)	888	(10.1)	2 316	(9.7)	0	2 316	(9.7)
Undetermined	1 576	(10.5)	885	(10.1)	2 461	(10.3)	3	2 464	(10.3)
Total	15 046	(100.0)	8789	(100.0)	23 835	(100.0)	5	23 840	(100.0)
No information available	20		8		28		0	28	
Total	15 066		8797		23 863		5	23 868	

b. Dialysate solution bacterial count. Measured bacterial counts in the dialysate solution were reported by 1565 facilities, 97.4% of which satisfied the quality control standard by the Japanese Society for Dialysis Therapy, which is <100 cfu/mL (Table 19). The percentage of facilities that satisfied the ultrapure dialysate solution level of <0.1 cfu/mL was 47.9%.

c. Medium used for bacterial cultivation of the dialysate solution. The use of an oligotrophic medium is recommended for the cultivation of bacteria in the dialysate solution. According to the survey result, an oligotrophic medium of Reasoner's No 2 agar (R2A) or tryptone glucose extract agar (TGEA) was used at 73.4% of the facilities. The percentage of facilities that used R2A was the highest at 66.3% (Table 20).

d. Amount of sample for the measurement of the dialysate solution bacterial count. Generally, the amount of a sample used to measure the bacterial count in plate media was <1 mL; however, at least 10 mL of a sample is required to accurately measure a bacterial count of <0.1 cfu/mL in the dialysate solution, which is the count required to maintain an ultrapure dialysate solution. From the survey, the amount of the sample dialysate solution was 10 mL or more in 46.5% of the facilities (Table 21).

TABLE 13. *Annual changes in the major causes of death*

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Cardiac failure	30.3	30.5	31.3	33.2	32.7	36.5	33.4	30.4	30.5	31.1	29.9	28.2	25.4
Infectious disease	11.0	11.5	11.5	12.0	12.0	12.2	11.7	11.6	12.1	11.3	12.2	12.6	13.8
Cerebrovascular disease	14.2	15.4	14.2	14.0	14.2	12.9	13.2	13.9	13.7	13.6	13.5	14.1	13.5
Malignant tumor	7.7	6.9	6.4	6.9	5.8	6.9	7.6	8.2	7.6	7.1	7.4	7.3	7.2
Cardiac infarction	5.3	4.8	5.3	6.1	6.0	5.4	5.3	5.8	5.8	5.8	5.7	7.1	7.5
Others	5.1	4.9	5.7	4.7	5.2	4.8	4.4	4.6	4.4	4.5	4.1	4.5	5.8

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cardiac failure	24.1	23.9	24.1	24.3	23.2	25.5	25.1	25.0	25.1	25.8	24.9	24.0
Infectious disease	14.6	14.9	15.0	16.3	16.6	16.3	15.9	18.5	18.8	19.2	19.9	18.9
Cerebrovascular disease	12.9	12.6	12.1	11.3	11.3	11.6	11.2	10.7	10.6	9.8	9.4	8.9
Malignant tumor	7.7	8.1	7.7	7.6	8.3	8.5	8.5	8.5	9.0	9.0	9.2	9.2
Cardiac infarction	7.4	8.4	7.9	7.4	7.0	7.4	7.4	6.2	5.4	5.1	4.4	4.4
Others	6.3	6.7	7.0	7.7	7.9	9.1	9.0	9.7	10.3	9.1	9.5	9.7

TABLE 14. *Change in the annual crude death rate*

Year	Crude death rate (%)	Year	Crude death rate (%)
1983	9.0	1996	9.4
1984	8.9	1997	9.4
1985	9.1	1998	9.2
1986	9.0	1999	9.7
1987	8.5	2000	9.2
1988	9.2	2001	9.3
1989	7.9	2002	9.2
1990	9.6	2003	9.3
1991	8.9	2004	9.4
1992	9.7	2005	9.5
1993	9.4	2006	9.2
1994	9.5	2007	9.4
1995	9.7		

B. Current status of hepatitis virus infection

1. Hepatitis C virus antibody prevalence

The hepatitis C virus antibody (HCVAb) prevalence was calculated using the following equation:

HCVAb prevalence (%) = Number of HCVAb-positive patients ÷ (Number of HCVAb-positive patients + Number of HCVAb-negative patients)

In this equation, HCV-RNA was not taken into consideration.

a. Changes over the past eight years. The HCVAb prevalence of chronic dialysis patients at the end of each year was summarized on the basis of the results of the survey by the Statistical Survey Committee (4–9). The HCVAb prevalence decreased yearly from 15.95% in 1999 to <10% at the end of 2007 (9.83%; Table 22). The previous activities carried out to prevent in-hospital infection from 1999 until today include the publication of the "Manual for prevention of in-hospital infection in dialysis therapy (initial version)" (10) in 1999, the start of the sale of erythropoietin-prefilled syringes in 2001, and the publication of the "Manual for prevention of in-hospital infection in dialysis therapy (revised version)" (11) in 2006.

b. Treatment method. Table 23 shows the relationship between HCVAb prevalence and the treatment method. The HCVAb prevalence in patients treated by hemoabsorption was the highest, followed by those in patients treated by hemodiafiltration and home hemodialysis. As explained later, patients with a longer dialysis duration showed a higher HCVAb prevalence. The duration of dialysis in patients treated by the above methods was long and thereby considered to account for the high HCVAb prevalence (the mean durations of dialysis for patients treated by different methods obtained from this survey are: 6.46 ± 6.57 (±SD) years for facility hemodialysis, 11.45 ± 9.03 years for hemodiafiltration, 6.06 ± 6.77 years for hemofiltration, 24.68 ± 6.59 years for hemoabsorption, 12.42 ± 9.38 years for home hemodialysis, and 3.54 ± 4.17 years for peritoneal dialysis). The HCVAb prevalence in patients treated by peritoneal dialysis was lower than that in patients treated by facility hemodialysis, which was probably because the duration of dialysis was short in patients treated by peritoneal dialysis. These trends were almost similar to those in the 2006 survey.

c. Gender. Table 24 shows the relationship between HCVAb prevalence and gender. The HCVAb prevalence in male patients was higher than that in female patients.

d. Duration of dialysis. Table 25 shows the relationship between HCVAb prevalence and the duration of dialysis. Before reaching the duration of 15 years, the HCVAb prevalence was approximately 7.7% and showed no particular relationship with the duration of dialysis; however, the HCVAb prevalence tended to increase when the duration of dialysis was 15 years or longer, and it markedly increased with increasing dialysis duration of >20 years. The HCV virus was first detected and HCVAb tests therefore performed in the clinical setting about 20 years ago, which may account for the increase in HCVAb prevalence in patients who have undergone dialysis for 20 years or longer.

e. Age. Table 26 shows the relationship between HCVAb prevalence and age. The HCVAb prevalence was relatively high in the 45–89 age group, whereas that in patients outside this age group, younger or older, was low. This age group includes many patients with a relatively long duration of dialysis, which may account for such a high HCVAb prevalence.

f. Primary disease. Table 27 shows the relationship between HCVAb prevalence and primary disease. To easily understand HCVAb prevalence in relation to the primary disease, the primary diseases are listed in descending order of HCVAb prevalence. The HCVAb prevalence in patients who had been reintroduced to dialysis after transplantation and who had renal or urinary tract tuberculosis as the primary

TABLE 15. *Survival rates of new patients begun on dialysis since 1983*

Year when patients were newly introduced to dialysis	Number of patients	1-year survival rate	2-year survival rate	3-year survival rate	4-year survival rate	5-year survival rate	6-year survival rate	7-year survival rate	8-year survival rate	9-year survival rate	10-year survival rate	11-year survival rate	12-year survival rate	13-year survival rate	14-year survival rate	15-year survival rate	16-year survival rate	17-year survival rate	18-year survival rate	19-year survival rate	20-year survival rate	21-year survival rate	22-year survival rate	23-year survival rate	24-year survival rate
1983	9923	0.819	0.748	0.683	0.634	0.590	0.557	0.525	0.486	0.457	0.426	0.397	0.373	0.349	0.330	0.309	0.290	0.274	0.257	0.244	0.229	0.216	0.202	0.191	0.181
1984	10 764	0.818	0.736	0.671	0.621	0.578	0.539	0.500	0.467	0.437	0.409	0.380	0.355	0.331	0.310	0.290	0.273	0.255	0.241	0.229	0.214	0.201	0.191	0.182	
1985	11 676	0.796	0.721	0.662	0.611	0.565	0.523	0.487	0.447	0.416	0.388	0.363	0.339	0.314	0.292	0.274	0.256	0.239	0.224	0.211	0.195	0.183	0.172		
1986	12 676	0.799	0.725	0.667	0.619	0.566	0.521	0.480	0.446	0.410	0.380	0.353	0.329	0.307	0.286	0.269	0.252	0.235	0.222	0.210	0.198	0.185			
1987	13 618	0.816	0.739	0.673	0.609	0.558	0.509	0.464	0.428	0.396	0.367	0.341	0.317	0.296	0.274	0.256	0.241	0.223	0.206	0.193	0.183				
1988	14 828	0.825	0.741	0.668	0.605	0.549	0.501	0.458	0.421	0.386	0.355	0.329	0.305	0.283	0.262	0.244	0.227	0.213	0.198	0.188					
1989	14 663	0.850	0.762	0.689	0.620	0.564	0.515	0.470	0.431	0.396	0.364	0.338	0.313	0.291	0.271	0.253	0.237	0.221	0.208						
1990	16 600	0.839	0.750	0.675	0.610	0.556	0.503	0.461	0.421	0.386	0.355	0.327	0.302	0.280	0.263	0.246	0.230	0.213							
1991	18 305	0.829	0.736	0.663	0.599	0.540	0.489	0.446	0.408	0.377	0.347	0.320	0.295	0.275	0.256	0.239	0.223								
1992	19 991	0.822	0.728	0.652	0.589	0.532	0.484	0.440	0.402	0.370	0.342	0.317	0.293	0.273	0.252	0.234									
1993	20 990	0.833	0.743	0.667	0.599	0.543	0.492	0.448	0.410	0.377	0.347	0.320	0.296	0.273	0.255										
1994	21 548	0.831	0.745	0.672	0.606	0.547	0.495	0.452	0.414	0.378	0.347	0.318	0.295	0.273											
1995	23 053	0.842	0.755	0.682	0.613	0.556	0.508	0.465	0.426	0.391	0.359	0.330	0.306												
1996	25 109	0.833	0.751	0.676	0.613	0.559	0.512	0.462	0.424	0.389	0.357	0.329													
1997	25 780	0.840	0.754	0.684	0.624	0.567	0.518	0.474	0.431	0.396	0.364														
1998	27 073	0.846	0.767	0.701	0.640	0.579	0.529	0.481	0.440	0.405															
1999	28 094	0.852	0.775	0.709	0.643	0.586	0.534	0.488	0.448																
2000	29 619	0.858	0.780	0.714	0.652	0.596	0.543	0.497																	
2001	31 344	0.857	0.778	0.710	0.646	0.592	0.541																		
2002	32 107	0.861	0.784	0.718	0.657	0.598																			
2003	33 269	0.863	0.787	0.721	0.660																				
2004	34 474	0.869	0.793	0.729																					
2005	35 594	0.865	0.792																						
2006	36 629	0.874																							

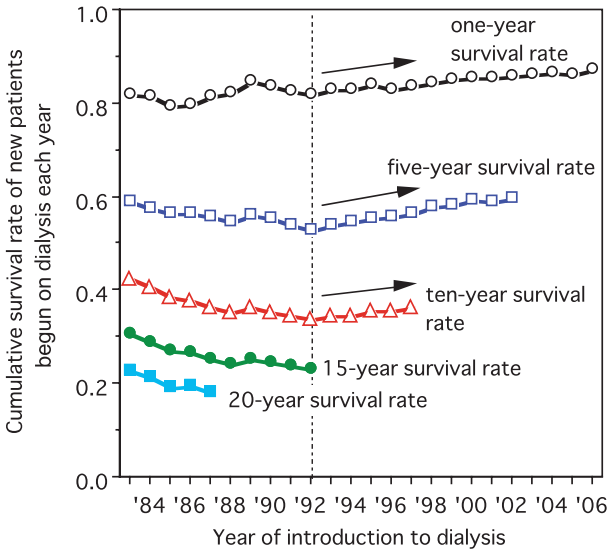

FIG. 2. Changes in the cumulative survival rate of patients begun on dialysis.

disease were 20% or higher. In contrast, the HCVAb prevalence in patients with myeloma as the primary disease was as low as 4.52%. The HCVAb prevalence in patients with other primary diseases ranged between 6% and 13%, showing a continuous distribution without a marked difference.

The HCVAb prevalence in patients with chronic glomerulonephritis as the primary disease, the number of which is largest among all the patients, was 10.35%, and that in patients with diabetic nephropathy, which is the second largest in number, was 10.29%; these prevalences were not significantly different. For the third largest number of patients with nephrosclerosis as the primary disease, the HCVAb prevalence was 6.89% and lower than that for the patients with the two above-mentioned primary diseases.

2. Hepatitis B virus surface antigen prevalence

The hepatitis B virus surface antigen (HBsAg) prevalence was calculated using the following equation:

HBsAg prevalence (%) = Number of HBsAg-positive patients ÷ (Number of HBsAg-positive patients + Number of HBsAg-negative patients)

The mean HBsAg prevalence of all the patients surveyed in this study was 1.94%.

a. Treatment method. Table 28 shows the relationship between HBsAg prevalence and treatment method. The HBsAg prevalence in patients treated by hemoabsorption was as high as 3.69%, whereas those in patients treated by hemofiltration and peritoneal dialysis were slightly low (approximately 1.5%). Following these treatment methods, the HBsAg prevalence in patients treated by home hemodialysis was as low as 1.71%. The HBsAg prevalence in patients treated by hemodialysis and hemodiafiltration were nearly equal to the mean in all the dialysis patients.

b. Gender. Table 29 shows the relationship between HBsAg prevalence and gender. Similarly to HCVAb prevalence, the HBsAg prevalence was higher in male patients than in female patients.

c. Duration of dialysis. Table 30 shows the relationship between HBsAg prevalence and duration of dialysis. For the patients with the duration longer than 10 years, the HBsAg prevalence tended to increase with increasing duration of dialysis.

d. Age. Table 31 shows the relationship between HBsAg prevalence and age. The HBsAg prevalence was high in patients in the 45–74 age group, whereas that in patients outside this age group, that is, younger or older patients, was low.

e. Primary disease. Table 32 shows the relationship between HBsAg prevalence and primary disease. To easily understand the relationship between them, primary diseases are listed in the descending order of HBsAg prevalence. From this list, the primary diseases with HBsAg prevalence are renal or urinary tract tuberculosis and nephropathy of pregnancy or pregnancy toxemia, whereas those with low HBsAg prevalence include renal or urinary tract calculosis, rapidly progressive glomerulonephritis, and amyloid nephropathy.

The HBsAg prevalence in patients with chronic glomerulonephritis as the primary disease, whose number was largest among all the patients, was 2.08%. That in patients with diabetic nephropathy, whose number was the second largest, was 1.85%.

C. Current status of renal anemia therapy

In the survey conducted at the end of 2007, hemoglobin concentration, serum iron concentration, total iron-binding capacity, and serum ferritin concentration (all of these are pre-dialysis values) were investigated as indices regarding renal anemia therapy. The relationships between hemoglobin concentration and other related indices are reported below.

TABLE 16. *Measurement frequency of the dialysate solution endotoxin concentration (according to the type of facility)*

Kind of facility	Measurement frequency of endotoxin concentration: None	Every day	Every week	Every two weeks	Every month	Several times per year	Once a year	Subtotal	Unspecified	No information available	Total
National public university hospital	2	0	0	1	17	23	5	48	1	2	51
(%)	(4.2)	(0.0)	(0.0)	(2.1)	(35.4)	(47.9)	(10.4)	(100.0)			
Private university hospital	6	0	1	6	23	20	2	58	3	1	62
(%)	(10.3)	(0.0)	(1.7)	(10.3)	(39.7)	(34.5)	(3.4)	(100.0)			
National hospital	4	0	1	0	5	13	6	29	5	6	40
(%)	(13.8)	(0.0)	(3.4)	(0.0)	(17.2)	(44.8)	(20.7)	(100.0)			
Prefectural municipal village hospital	48	1	2	7	88	173	64	383	32	22	437
(%)	(12.5)	(0.3)	(0.5)	(1.8)	(23.0)	(45.2)	(16.7)	(100.0)			
Social insurance hospital	7	0	0	3	13	27	10	60	2	1	63
(%)	(11.7)	(0.0)	(0.0)	(5.0)	(21.7)	(45.0)	(16.7)	(100.0)			
"Kouseiren"† hospital	5	0	1	6	28	48	23	111	5	3	119
(%)	(4.5)	(0.0)	(0.9)	(5.4)	(25.2)	(43.2)	(20.7)	(100.0)			
Other public hospital	21	1	5	7	43	67	30	174	4	6	184
(%)	(12.1)	(0.6)	(2.9)	(4.0)	(24.7)	(38.5)	(17.2)	(100.0)			
Private general hospital	12	1		5	25	42	14	99	8	1	108
(%)	(12.1)	(1.0)		(5.1)	(25.3)	(42.4)	(14.1)	(100.0)			
Private hospital	138	6	26	46	234	386	175	1011	57	44	1112
(%)	(13.6)	(0.6)	(2.6)	(4.5)	(23.1)	(38.2)	(17.3)	(100.0)			
Private clinic	216	12	45	128	366	658	266	1691	92	93	1876
(%)	(12.8)	(0.7)	(2.7)	(7.6)	(21.6)	(38.9)	(15.7)	(100.0)			
Total	459	21	81	209	842	1457	595	3664	209	179	4052
(%)	(12.5)	(0.6)	(2.2)	(5.7)	(23.0)	(39.8)	(16.2)	(100.0)			

†Kouseiren: a welfare association belonging to agricultural cooperative associations.

TABLE 17. *Dialysate solution endotoxin concentrations (according to the type of facility)*

Kind of facility	Dialysate solution endotoxin concentration (EU/mL): <0.001	0.001–0.009	0.010–0.049	0.050–0.099	0.100–0.249	0.250–0.499	≥0.500	Subtotal	Unspecified	No information available	Total
National public university hospital	30	10	4	1	0	0	0	45	2	4	51
(%)	(66.7)	(22.2)	(8.9)	(2.2)	(0.0)	(0.0)	(0.0)	(100.0)			
Private university hospital	24	17	10	0	1	0	0	52	3	7	62
(%)	(46.2)	(32.7)	(19.2)	(0.0)	(1.9)	(0.0)	(0.0)	(100.0)			
National hospital	14	7	4	0	1	0	0	26	5	9	40
(%)	(53.8)	(26.9)	(15.4)	(0.0)	(3.8)	(0.0)	(0.0)	(100.0)			
Prefectural municipal village hospital	197	87	42	6	2	2	3	339	26	72	437
(%)	(58.1)	(25.7)	(12.4)	(1.8)	(0.6)	(0.6)	(0.9)	(100.0)			
Social insurance hospital	25	17	7	3	0	0	0	52	3	8	63
(%)	(48.1)	(32.7)	(13.5)	(5.8)	(0.0)	(0.0)	(0.0)	(100.0)			
"Kouseiren"† hospital	53	30	13	4	2	1	2	105	6	8	119
(%)	(50.5)	(28.6)	(12.4)	(3.8)	(1.9)	(1.0)	(1.9)	(100.0)			
Other public hospital	89	43	15	4	1	0	0	152	5	27	184
(%)	(58.6)	(28.3)	(9.9)	(2.6)	(0.7)	(0.0)	(0.0)	(100.0)			
Private general hospital	44	24	13	3	2	1	0	87	7	14	108
(%)	(50.6)	(27.6)	(14.9)	(3.4)	(2.3)	(1.1)	(0.0)	(100.0)			
Private hospital	423	231	140	36	26	8	4	868	60	184	1112
(%)	(48.7)	(26.6)	(16.1)	(4.1)	(3.0)	(0.9)	(0.5)	(100.0)			
Private clinic	789	399	182	50	28	9	3	1460	98	318	1876
(%)	(54.0)	(27.3)	(12.5)	(3.4)	(1.9)	(0.6)	(0.2)	(100.0)			
Total	1688	865	430	107	63	21	12	3186	215	651	4052
(%)	(53.0)	(27.2)	(13.5)	(3.4)	(2.0)	(0.7)	(0.4)	(100.0)			

†Kouseiren: a welfare association belonging to agricultural cooperative associations.

TABLE 18. *Measurement frequency of the dialysate solution bacterial count (according to the type of facility)*

	Measurement frequency of the dialysate solution bacterial count										
Kind of facility	None	Every day	Every week	Every two weeks	Every month	Several times per year	Once a year	Subtotal	Unspecified	No information available	Total
National public university hospital	21	0	0	0	9	15	1	46	3	2	51
(%)	(45.7)	(0.0)	(0.0)	(0.0)	(19.6)	(32.6)	(2.2)	(100.0)			
Private university hospital	18	0	1	3	8	19	3	52	9	1	62
(%)	(34.6)	(0.0)	(1.9)	(5.8)	(15.4)	(36.5)	(5.8)	(100.0)			
National hospital	19	0	0	1	1	5	4	30	4	6	40
(%)	(63.3)	(0.0)	(0.0)	(3.3)	(3.3)	(16.7)	(13.3)	(100.0)			
Prefectural municipal village hospital	199	1	1	2	45	76	39	363	48	26	437
(%)	(54.8)	(0.3)	(0.3)	(0.6)	(12.4)	(20.9)	(10.7)	(100.0)			
Social insurance hospital	25	0	2	0	6	17	5	55	7	1	63
(%)	(45.5)	(0.0)	(3.6)	(0.0)	(10.9)	(30.9)	(9.1)	(100.0)			
"Kouseiren"[†] hospital	40	0	0	2	18	27	13	100	16	3	119
(%)	(40.0)	(0.0)	(0.0)	(2.0)	(18.0)	(27.0)	(13.0)	(100.0)			
Other public hospital	84	0	2	3	28	31	20	168	8	8	184
(%)	(50.0)	(0.0)	(1.2)	(1.8)	(16.7)	(18.5)	(11.9)	(100.0)			
Private general hospital	60	2	0	2	14	10	7	95	12	1	108
(%)	(63.2)	(2.1)	(0.0)	(2.1)	(14.7)	(10.5)	(7.4)	(100.0)			
Private hospital	462	4	14	21	130	180	124	935	129	48	1112
(%)	(49.4)	(0.4)	(1.5)	(2.2)	(13.9)	(19.3)	(13.3)	(100.0)			
Private clinic	788	3	13	64	180	361	188	1597	176	103	1876
(%)	(49.3)	(0.2)	(0.8)	(4.0)	(11.3)	(22.6)	(11.8)	(100.0)			
Total	1716	10	33	98	439	741	404	3441	412	199	4052
(%)	(49.9)	(0.3)	(1.0)	(2.8)	(12.8)	(21.5)	(11.7)	(100.0)			

[†]Kouseiren: a welfare association belonging to agricultural cooperative associations.

TABLE 19. *Dialysate solution bacterial counts (according to the type of facility)*

Kind of facility	Dialysate solution bacterial count (cfu/mL) <0.1	0.1–0.9	1–9	10–99	≥100	Subtotal	Unspecified	No information available	Total
National public university hospital	8	7	4	4	0	23	5	23	51
(%)	(34.8)	(30.4)	(17.4)	(17.4)	(0.0)	(100.0)			
Private university hospital	11	10	8	3	0	32	10	20	62
(%)	(34.4)	(31.3)	(25.0)	(9.4)	(0.0)	(100.0)			
National hospital	8	0	2	1	0	11	4	25	40
(%)	(72.7)	(0.0)	(18.2)	(9.1)	(0.0)	(100.0)			
Prefectural municipal village hospital	79	20	24	22	4	149	62	226	437
(%)	(53.0)	(13.4)	(16.1)	(14.8)	(2.7)	(100.0)			
Social insurance hospital	10	6	5	6	0	27	10	26	63
(%)	(37.0)	(22.2)	(18.5)	(22.2)	(0.0)	(100.0)			
"Kouseiren"† hospital	28	10	10	6	2	56	18	45	119
(%)	(50.0)	(17.9)	(17.9)	(10.7)	(3.6)	(100.0)			
Other public hospital	44	14	13	4	2	77	15	92	184
(%)	(57.1)	(18.2)	(16.9)	(5.2)	(2.6)	(100.0)			
Private general hospital	15	4	6	4	2	31	15	62	108
(%)	(48.4)	(12.9)	(19.4)	(12.9)	(6.5)	(100.0)			
Private hospital	179	80	90	60	15	424	174	514	1112
(%)	(42.2)	(18.9)	(21.2)	(14.2)	(3.5)	(100.0)			
Private clinic	368	137	136	79	15	735	239	902	1876
(%)	(50.1)	(18.6)	(18.5)	(10.7)	(2.0)	(100.0)			
Total	750	288	298	189	40	1565	552	1935	4052
(%)	(47.9)	(18.4)	(19.0)	(12.1)	(2.6)	(100.0)			

†Kouseiren: a welfare association belonging to agricultural cooperative associations.

1. Changes over the past three years

Table 33 shows the distribution of hemoglobin concentrations in all the dialysis patients from the end of 2005 to the end of 2007. The mean hemoglobin concentrations in all the dialysis patients at the end of 2005, 2006, and 2007 were 10.23, 10.23, and 10.27 g/dL, respectively, showing negligible change over these three years; however, the percentages of patients with hemoglobin concentrations <10.0 g/dL at the end of 2005, 2006, and 2007 were 39.0, 39.8, and 37.8%, respectively, showing a slight decrease in 2007. The percentages of patients with hemoglobin

TABLE 20. *Media used for bacterial cultivation of the dialysate solution (according to the dialysate solution bacterial count)*

Media used for bacterial cultivation of the dialysate solution	Dialysate solution bacterial count (cfu/mL) <0.1	0.1–0.9	1–9	10–99	≥100	Subtotal	Unspecified	No information available	Total
General agar medium	122	33	27	14	3	199	21	0	220
(%)	(61.3)	(16.6)	(13.6)	(7.0)	(1.5)	(100.0)			
R2A medium	410	189	211	141	29	980	44	4	1028
(%)	(41.8)	(19.3)	(21.5)	(14.4)	(3.0)	(100.0)			
TGEA medium	55	24	23	7	1	110	1	0	111
(%)	(50.0)	(21.8)	(20.9)	(6.4)	(0.9)	(100.0)			
Blood agar medium	26	5	4	4	1	40	8	4	52
(%)	(65.0)	(12.5)	(10.0)	(10.0)	(2.5)	(100.0)			
TSA medium	4	1	1	2	1	9	0	0	9
(%)	(44.4)	(11.1)	(11.1)	(22.2)	(11.1)	(100.0)			
Other media	59	15	17	6	1	98	33	0	131
(%)	(60.2)	(15.3)	(17.3)	(6.1)	(1.0)	(100.0)			
Subtotal	676	267	283	174	36	1436	107	8	1551
(%)	(47.1)	(18.6)	(19.7)	(12.1)	(2.5)	(100.0)			
Unspecified	73	20	14	15	4	126	443	1151	1720
(%)	(57.9)	(15.9)	(11.1)	(11.9)	(3.2)	(100.0)			
No information available	1	1	1			3	2	776	781
(%)	(33.3)	(33.3)	(33.3)			(100.0)			
Total	750	288	298	189	40	1565	552	1935	4052
(%)	(47.9)	(18.4)	(19.0)	(12.1)	(2.6)	(100.0)			

R2A, Reasoner's No 2 agar; TGEA, tryptone glucose extract agar; TSA, tryptic soy agar.

TABLE 21. *Amount of sample used for measuring dialysate solution bacterial count (according to the dialysate solution bacterial count)*

Amount of sample	Dialysate solution bacterial count (cfu/mL)					Subtotal	Unspecified	No information available	Total
	<0.1	0.1–0.9	1–9	10–99	≥100				
<1 mL	141	28	22	10	3	204	20	2	226
(%)	(69.1)	(13.7)	(10.8)	(4.9)	(1.5)	(100.0)			
1–9 mL	253	113	132	68	16	582	74	4	660
(%)	(43.5)	(19.4)	(22.7)	(11.7)	(2.7)	(100.0)			
10–49 mL	152	64	71	58	9	354	21	1	376
(%)	(42.9)	(18.1)	(20.1)	(16.4)	(2.5)	(100.0)			
50–99 mL	114	44	47	36	7	248	7	1	256
(%)	(46.0)	(17.7)	(19.0)	(14.5)	(2.8)	(100.0)			
100 499 mL	43	19	14	7	1	84	4	1	89
(%)	(51.2)	(22.6)	(16.7)	(8.3)	(1.2)	(100.0)			
500–999 mL	4	5	5	2	2	18	4	0	22
(%)	(22.2)	(27.8)	(27.8)	(11.1)	(11.1)	(100.0)			
1–9 L	14	3	1	6	0	24	1	0	25
(%)	(58.3)	(12.5)	(4.2)	(25.0)	(0.0)	(100.0)			
≥10 L	3	0	0	0	0	3	0	0	3
(%)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)			
Subtotal	724	276	292	187	38	1517	131	9	1657
(%)	(47.7)	(18.2)	(19.2)	(12.3)	(2.5)	(100.0)			
Unspecified	24	12	5	2	2	45	420	1138	1603
(%)	(53.3)	(26.7)	(11.1)	(4.4)	(4.4)	(100.0)			
No information available	2	0	1	0	0	3	3	788	792
(%)	(66.7)	(0.0)	(33.3)	(0.0)	(0.0)	(100.0)			
Total	750	288	298	189	40	1565	552	1935	4052
(%)	(47.9)	(18.4)	(19.0)	(12.1)	(2.6)	(100.0)			

concentrations of ≥10.0 g/dL and <12.0 g/dL at the end of 2005, 2006, and 2007 were 52.7, 51.9, and 53.9%, respectively, showing a slight increase in 2007. The percentage of patients with a hemoglobin concentration of ≥12.0 g/dL remained at 8.3% from the end of 2005 to the end of 2007.

2. Gender

Table 34 shows the relationship between hemoglobin concentration and gender. The mean hemoglobin concentration in male patients was 10.36 g/dL, whereas that in female patients was 10.13 g/dL, which was slightly lower than that in male patients. The percentage of patients with hemoglobin concentrations <10 g/dL was 35.1% in male patients and 42.2% in female patients, indicating that the number of patients with a low hemoglobin concentration is great in female patients.

3. Age

Table 35 shows the relationship between hemoglobin concentration and age. The hemoglobin concentration in young patients aged 15 years or older and younger than 45 years was high, whereas that in patients older than this age group decreased with increasing age. Patients younger than 15 years also tended to have low hemoglobin concentrations.

4. Primary disease

Table 36 shows the relationship between hemoglobin concentration and primary disease. The mean hemoglobin concentrations in patients with leading primary diseases were 10.33 g/dL (chronic glomerulonephritis), 10.22 g/dL (diabetic nephropathy), 10.20 g/dL (nephrosclerosis), and 10.45 g/dL (polycystic kidney disease). Patients with polycystic kidney disease tended to have a high hemoglobin concentration. No clear difference in hemoglobin concentration was found between other main primary diseases.

5. Change in iron metabolism-related indices over the past three years

Table 37 shows the changes in mean hemoglobin concentration, serum iron concentration, total

TABLE 22. *Changes in hepatitis C virus (HCV) antibody prevalence*

Year	1999	2000	2001	2002	2003	2006	2007
HCVAb prevalence (%)	15.95	14.56	13.88	13.06	12.37	10.22	9.83

TABLE 23. *Hepatitis C virus (HCV) antibody (HCVAb) prevalence and treatment methods (all dialysis patients)*

Method of dialysis	HCVAb: –					HCVAb: +							HCVAb: unspecified				HCVAb: no information available					
	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-1	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-2	Subtotal-1 + Subtotal-2	HCVAb prevalence† (%)	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	Subtotal	No information available	Total
Facility hemodialysis	48 867	209	85 241	35 980	170 297	2801	4707	6706	3193	17 407	187 704	9.27	1044	196	1974	100	880	148	619	192 665	43 295	235 960
Hemodiafiltration	3 722	35	5 763	2 524	12 044	268	742	813	474	2 297	14 341	16.02	33	31	64	2	74	21	101	14 667	3 092	17 759
Hemofiltration	14	0	19	131	164	2	4	5	10	21	185	11.35	4	0	0	0	0	0	1	190	113	303
Hemoadsorption	200	4	391	149	744	60	171	212	102	545	1 289	42.28	1	15	10	0	7	8	12	1 342	201	1 543
Home hemodialysis	46	0	46	9	101	1	5	9	2	17	118	14.41	0	0	4	0	0	0	0	122	39	161
Peritoneal dialysis	1 164	2	2 681	966	4813	46	28	110	46	230	5 043	4.56	4	0	211	99	6	1	61	5 425	3 205	8 630
Total	54 013	250	94 141	39 759	188 163	3178	5657	7855	3827	20 517	208 680	9.83	1086	242	2263	201	967	178	794	214 411	49 945	264 356

†HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 24. *Hepatitis C virus (HCV) antibody (HCVAb) prevalence and gender (all dialysis patients)*

Genders	HCVAb: –					HCVAb: +							HCVAb: unspecified				HCVAb: no information available					
	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-1	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-2	Subtotal-1 + Subtotal-2	HCVAb prevalence† (%)	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	Subtotal	No information available	Total
Male	32 940	142	57 299	24 223	114 604	2007	3746	5207	2516	13 476	128 080	10.52	619	150	1421	131	594	116	501	131 612	30 611	162 223
Female	21 073	108	36 840	15 517	73 538	1171	1911	2648	1311	7 041	80 579	8.74	467	92	842	70	373	62	293	82 778	19 334	102 112
Subtotal	54 013	250	94 139	39 740	188 142	3178	5657	7855	3827	20 517	208 659	9.83	1086	242	2263	201	967	178	794	214 390	49 945	264 335
No information available	0	0	2	19	21	0	0	0	0	0	21	0.00	0	0	0	0	0	0	0	21	0	21
Total	54 013	250	94 141	39 759	188 163	3178	5657	7855	3827	20 517	208 680	9.83	1086	242	2263	201	967	178	794	214 411	49 945	264 356

†HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 25. *Hepatitis C virus (HCV) antibody (HCVAb) prevalence and duration of dialysis (all dialysis patients)*

Duration of dialysis (years)	HCVAb: –					HCVAb: +							HCVAb: unspecified				HCVAb: no information available					
	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-1	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-2	Subtotal-1 + Subtotal-2	HCVAb prevalence† (%)	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	Subtotal	No information available	Total
<2	13 113	52	22 936	9271	45 372	565	847	1600	701	3 713	49 085	7.56	177	27	687	82	260	32	121	50 471	11 667	62 138
2–4	14 226	57	24 849	10 581	49 713	711	1114	1661	772	4 258	53 971	7.89	265	41	564	57	229	38	203	55 368	13 202	68 570
5–9	13 816	52	24 042	10 077	47 987	702	1084	1548	753	4 087	52 074	7.85	343	51	531	28	210	37	168	53 442	12 634	66 076
10–14	6 771	30	11 844	4 857	23 502	332	571	734	346	1 983	25 485	7.78	158	24	247	14	124	14	101	26 167	6 103	32 270
15–19	3 243	16	5 711	2 672	11 642	219	417	511	250	1 397	13 039	10.71	86	24	127	10	67	12	66	13 431	3 041	16 472
20–24	1 691	15	2 794	1 366	5 866	264	555	622	341	1 782	7 648	23.30	33	19	58	7	30	16	59	7 870	1 733	9 603
≥25	1 153	28	1 965	935	4 081	385	1069	1179	664	3 297	7 378	44.69	24	56	49	3	47	29	76	7 662	1 565	9 227
Total	54 013	250	94 141	39 759	188 163	3178	5657	7855	3827	20 517	208 680	9.83	1086	242	2263	201	967	178	794	214 411	49 945	264 356
Mean	6.35	9.26	6.32	6.56		9.99	12.09	10.38	11.25				7.28	13.63	5.77	4.64	6.93	10.84	9.59	6.84	6.68	6.81
SD	6.35	9.34	6.31	6.51		9.64	10.63	10.26	10.58				6.24	11.11	6.33	6.22	7.43	10.37	9.05	7.02	6.82	6.98

†HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 26. *Hepatitis C virus (HCV) antibody (HCVAb) prevalence and age (all dialysis patients)*

Age (years)	HCVAb: –					HCVAb: +							HCVAb: unspecified				HCVAb: no information available					
	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-1	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-2	Subtotal-1 + Subtotal-2	HCVAb prevalence† (%)	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	Subtotal	No information available	Total
<15	12	0	29	19	60	0	0	0	0	0	60	0.00	0	0	8	0	0	0	0	68	38	106
15–29	356	2	620	294	1 272	10	7	10	2	29	1 301	2.23	9	0	19	3	7	0	5	1 344	353	1 697
30–44	3 469	6	6 083	2 619	12 177	115	226	226	138	705	12 882	5.47	70	4	149	15	64	7	43	13 234	3 187	16 421
45–59	13 550	58	23 765	10 126	47 499	778	1676	2005	1119	5 578	53 077	10.51	255	71	555	63	243	51	236	54 551	12 890	67 441
60–74	23 456	115	40 903	17 153	81 627	1477	2626	3823	1838	9 764	91 391	10.68	482	115	961	85	420	74	316	93 844	21 477	115 321
75–89	12 598	68	21 774	9 149	43 589	773	1101	1744	717	4 335	47 924	9.05	251	50	547	32	225	46	188	49 263	11 465	60 728
≥90	572	1	966	398	1 937	25	21	47	12	105	2 042	5.14	19	2	24	3	8	0	6	2 104	532	2 636
Subtotal	54 013	250	94 140	39 758	188 161	3178	5657	7855	3826	20 516	208 677	9.83	1086	242	2263	201	967	178	794	214 408	49 942	264 350
No information available	0	0	1	1	2	0	0	0	1	1	3	33.33	0	0	0	0	0	0	0	3	3	6
Total	54 013	250	94 141	39 759	188 163	3178	5657	7855	3827	20 517	208 680	9.83	1086	242	2263	201	967	178	794	214 411	49 945	264 356
Mean	64.96	66.36	64.85	64.66		66.15	64.52	65.90	64.68				65.45	65.47	64.57	62.57	64.91	65.76	64.42	64.89	64.76	64.87
SD	12.80	11.76	12.82	12.91		11.36	10.93	10.69	10.65				12.92	10.07	13.53	13.12	12.74	11.08	12.52	12.66	12.90	12.71

†HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 27. *Hepatitis C virus (HCV) antibody (HCVAb) prevalence and primary disease (all dialysis patients)*

Primary disease	HCVAb: –					HCVAb: +					Subtotal-1 + Subtotal-2	HCVAb prevalence† (%)	HCVAb: unspecified				HCVAb: no information available			Subtotal	No information available	Total
	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-1	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	Subtotal-2			HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified	HCV-RNA: no information available	HCV-RNA: –	HCV-RNA: +	HCV-RNA: unspecified			
Reintroduction after transplantation	303	5	602	247	1 157	31	94	113	66	304	1 461	20.81	1	2	18	14	7	5	5	1 513	381	1894
Kidney and urinary tract tuberculosis	68	1	136	38	243	11	18	22	10	61	304	20.07	0	2	5	0	0	0	1	312	80	392
Nephropathy of pregnancy/ pregnancy toxemia	340	2	604	288	1 234	34	55	65	46	200	1 434	13.95	2	3	13	2	5	2	3	1 464	311	1 775
Other nephritides that cannot be classified	242	1	386	186	815	23	34	40	21	118	933	12.65	5	2	9	2	5	0	1	957	257	1 214
Kidney and urinary tract stone	118	0	192	91	401	10	16	18	8	52	453	11.48	2	0	8	0	1	0	2	466	86	552
Chronic pyelonephritis	655	3	1 028	515	2 201	57	74	95	55	281	2 482	11.32	13	0	15	2	9	3	16	2 540	598	3 138
Obstructive urinary tract disease	129	1	255	92	477	12	14	21	11	58	535	10.84	4	1	8	0	2	1	4	555	137	692
Renal failure due to congenital abnormality of metabolism	41	0	101	37	179	5	6	7	3	21	200	10.50	0	0	2	0	0	0	0	202	60	262
Chronic glomerulonephritis	21 986	100	37 281	15 979	75 346	1344	2531	3236	1584	8 695	84 041	10.35	491	123	900	62	394	72	411	86 494	20 210	106 704
Diabetic nephropathy	18 151	91	31 464	13 097	62 803	1050	1909	2838	1409	7 206	70 009	10.29	386	81	731	72	348	69	236	71 932	16 326	88 258
Hypoplastic kidney	98	1	200	87	386	9	12	14	5	40	426	9.39	2	1	11	0	1	0	0	441	107	548
Others	976	7	1 700	662	3 345	48	94	136	61	339	3 684	9.20	15	5	42	5	8	2	10	3 771	954	4 725
Undetermined	3 801	18	6 918	2 924	13 661	230	317	518	224	1 289	14 950	8.62	58	11	220	24	63	10	45	15 381	4 072	19 453
Kidney and urinary tract tumor	150	2	230	114	496	10	11	16	4	41	537	7.64	2	0	4	2	4	0	0	549	95	644
Gouty kidney	261	1	474	197	933	15	21	27	12	75	1 008	7.44	7	1	10	0	7	2	3	1 038	219	1 257
Nephrosclerosis	3 489	9	6 720	2 627	12 845	167	239	389	155	950	13 795	6.89	40	6	142	10	58	6	22	14 079	3 065	17 144
Amyloidal kidney	83	0	197	90	370	3	11	6	7	27	397	6.80	1	0	3	1	2	0	3	407	106	513
Rapidly progressive glomerulonephritis	322	1	649	276	1 248	16	16	33	24	89	1 337	6.66	1	1	15	0	4	0	7	1 365	377	1 742
Malignant hypertension	410	0	661	346	1 417	13	29	37	20	99	1 516	6.53	9	0	11	0	11	0	4	1 551	405	1 956
Systemic lupus erythematosus nephritis	435	1	835	360	1 631	16	35	37	21	109	1 740	6.26	2	2	19	0	8	1	5	1 777	484	2 261
Polycystic kidney	1 908	6	3 408	1 456	6 778	74	119	180	74	447	7 225	6.19	44	1	75	3	29	5	14	7 396	1 524	8 920
Myeloma	38	0	74	36	148	0	1	4	2	7	155	4.52	1	0	2	0	1	0	2	161	46	207
Subtotal	54 004	250	94 115	39 745	188 114	3178	5656	7852	3822	20 508	208 622	9.83	1086	242	2263	199	967	178	794	214 351	49 900	264 251
No information available	9	0	26	14	49	0	1	3	5	9	58	15.52	0	0	0	2	0	0	0	60	45	105
Total	54 013	250	94 141	39 759	188 163	3178	5657	7855	3827	20 517	208 680	9.83	1086	242	2263	201	967	178	794	214 411	49 945	264 356

†HCVAb prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 28. *Hepatitis B virus surface antigen (HBsAg) prevalence and treatment methods (all dialysis patients)*

Method of dialysis	HBs antibody: –				HBs antibody: +				HBs antibody: unspecified				HBs antibody: no information available				Subtotal-1 (HBsAg –)	Subtotal-2 (HBsAg +)	Subtotal-1 + Subtotal-2	HBsAg prevalence (%)†	Subtotal	No information available	Total
	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available							
Facility hemodialysis	102 263	1850	970	1198	16 152	627	78	341	47 508	723	1749	229	19 049	464	19	184 972	3664	188 636	1.94	193 220	42 740	235 960
Hemodiafiltration	7 958	133	54	90	1 328	51	2	47	3 206	59	43	16	1 686	42	3	14 178	285	14 463	1.97	14 718	3 041	17 759
Hemofiltration	110	2	0	0	5	0	0	1	17	0	0	0	4	0	0	136	2	138	1.45	139	164	303
Hemoadsorption	659	28	5	12	154	7	1	3	344	10	6	11	96	3	0	1 253	48	1 301	3.69	1 339	204	1 543
Home hemodialysis	89	2	0	0	14	0	0	0	8	0	4	0	4	0	0	115	2	117	1.71	121	40	161
Peritoneal dialysis	2 237	29	28	12	128	7	0	6	1 888	29	282	49	680	11	9	4 933	76	5 009	1.52	5 395	3 235	8 630
Total	113 316	2044	1057	1312	17 781	692	81	398	52 971	821	2084	305	21 519	520	31	205 587	4077	209 664	1.94	214 932	49 424	264 356

†HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 29. *Hepatitis B virus surface antigen (HBsAg) prevalence and genders (all dialysis patients)*

Gender	HBs antibody: –				HBs antibody: +				HBs antibody: unspecified				HBs antibody: no information available				Subtotal-1 (HBsAg –)	Subtotal-2 (HBsAg +)	Subtotal-1 + Subtotal-2	HBsAg prevalence (%)†	Subtotal	No information available	Total
	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available							
Male	69 324	1326	653	847	11 059	464	38	244	32 372	526	1296	193	13 209	346	23	125 964	2662	128 626	2.07	131 920	30 303	162 223
Female	43 992	718	404	465	6 722	228	43	154	20 597	295	788	112	8 291	174	8	79 602	1415	81 017	1.75	82 991	19 121	102 112
Subtotal	113 316	2044	1057	1312	17 781	692	81	398	52 969	821	2084	305	21 500	520	31	205 566	4077	209 643	1.94	214 911	49 424	264 335
No information available	0	0	0	0	0	0	0	0	2	0	0	0	19	0	0	21	0	21	0.00	21	0	21
Total	113 316	2044	1057	1312	17 781	692	81	398	52 971	821	2084	305	21 519	520	31	205 587	4077	209 664	1.94	214 932	49 424	264 356

†HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 30. *Hepatitis B virus surface antigen (HBsAg) prevalence and durations of dialysis (all dialysis patients)*

Duration of dialysis (years)	HBs antibody: –				HBs antibody: +				HBs antibody: unspecified				HBs antibody: no information available			Subtotal-1 (HBsAg –)	Subtotal-2 (HBsAg +)	Subtotal-1 + Subtotal-2	HBsAg prevalence (%)†	Subtotal	No information available	Total
	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified							
<2	26 996	404	318	250	3 362	124	8	65	12 977	189	625	48	4 980	114	15	48 315	831	49 146	1.69	50 475	11 663	62 138
2–4	29 327	481	290	317	4 472	158	15	110	13 653	215	543	95	5 737	119	7	53 189	973	54 162	1.80	55 539	13 031	68 570
5–9	28 262	507	284	309	4 573	182	20	96	13 075	175	493	71	5 451	123	7	51 361	987	52 348	1.89	53 628	12 448	66 076
10–14	13 933	275	79	160	2 303	96	12	45	6 416	106	217	47	2 486	73	1	25 138	550	25 688	2.14	26 249	6 021	32 270
15–19	7 035	142	38	105	1 269	58	8	32	3 244	59	113	18	1 323	45	0	12 871	304	13 175	2.31	13 489	2 983	16 472
20–24	4 086	94	27	70	825	43	6	18	1 803	32	46	11	792	24	1	7 506	193	7 699	2.51	7 878	1 725	9 603
≥25	3 677	141	21	101	977	31	12	32	1 803	45	47	15	750	22	0	7 207	239	7 446	3.21	7 674	1553	9 227
Total	113 316	2044	1057	1312	17 781	692	81	398	52 971	821	2084	305	21 519	520	31	205 587	4077	209 664	1.94	214 932	49 424	264 356
Mean	6.73	8.15	5.26	8.60	7.89	8.20	11.59	8.71	6.69	7.50	5.68	7.72	6.77	7.69	3.19					6.84	6.67	6.81
SD	6.88	8.03	6.03	8.40	7.71	7.55	9.47	8.72	6.93	7.71	6.26	7.71	6.94	7.53	4.34					7.01	6.84	6.98

†HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 31. *Hepatitis B virus surface antigen (HBsAg) prevalence and ages (all dialysis patients)*

Age (years)	HBs antibody: –				HBs antibody: +				HBs antibody: unspecified				HBs antibody: no information available			Subtotal-1 (HBsAg –)	Subtotal-2 (HBsAg +)	Subtotal-1 + Subtotal-2	HBsAg prevalence (%)†	Subtotal	No information available	Total
	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified							
<15	34	0	2	0	0	0	0	0	11	0	8	0	13	0	0	58	0	58	0.00	68	38	106
15–29	775	7	12	4	19	6	0	1	354	1	20	3	148	1	0	1 296	15	1 311	1.14	1 351	346	1 697
30–44	7 765	95	64	104	457	34	0	11	3 250	45	142	10	1280	27	1	12 752	201	12 953	1.55	13 285	3 136	16 421
45–59	29 404	694	246	381	3 970	215	18	95	13 065	266	526	89	5547	159	8	51 986	1334	53 320	2.50	54 683	12 758	67 441
60–74	48 761	950	463	548	8 487	311	47	186	23 304	383	899	151	9311	250	16	89 863	1894	91 757	2.06	94 067	21 254	115 321
75–89	25 508	289	257	264	4 626	120	16	99	12 471	117	465	50	5000	76	5	47 605	602	48 207	1.25	49 363	11 365	60 728
≥90	1 067	9	13	11	222	6	0	6	515	9	24	2	220	7	1	2 024	31	2 055	1.51	2 112	524	2 636
Subtotal	113 314	2044	1057	1312	17 781	692	81	398	52 970	821	2084	305	21 519	520	31	205 584	4077	209 661	1.94	214 929	49 421	264 350
No information available	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	3	0.00	3	3	6
Total	113 316	2044	1057	1312	17 781	692	81	398	52 971	821	2084	305	21 519	520	31	205 587	4077	209 664	1.94	214 932	49 424	264 356
Mean	64.53	62.89	65.06	63.58	67.17	63.66	66.25	66.93	65.07	62.83	64.07	63.83	64.90	63.21	65.94					64.89	64.78	64.87
SD	12.86	11.10	13.21	12.64	11.09	11.68	10.07	11.39	12.68	11.39	13.69	11.53	12.72	11.51	10.64					12.66	12.89	12.71

†HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 32. *Hepatitis B virus surface antigen (HBsAg) prevalence and primary diseases (all dialysis patients)*

	HBs antibody: –				HBs antibody: +				HBs antibody: unspecified				HBs antibody: no information available									
Primary disease	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	HBsAg: no information available	HBsAg: –	HBsAg: +	HBsAg: unspecified	Subtotal-1 (HBsAg –)	Subtotal-2 (HBsAg +)	Subtotal-1 + Subtotal-2	HBsAg prevalence (%)†	Subtotal	No information available	Total
Kidney and urinary tract tuberculosis	158	7	0	0	33	2	1	1	84	2	3	0	22	0	0	297	11	308	3.57	313	79	392
Nephropathy of pregnancy/ pregnancy toxemia	772	17	8	13	137	7	4	7	314	9	14	1	155	8	0	1 378	41	1 419	2.89	1 466	309	1 775
Gouty kidney	549	10	3	6	100	6	0	0	242	4	11	1	113	2	0	1 004	22	1 026	2.14	1 047	210	1 257
Other nephritides that cannot be classified	512	11	3	4	77	4	0	2	212	4	10	1	114	1	0	915	20	935	2.14	955	259	1 214
Polycystic kidney	3 858	72	32	40	657	21	1	14	1 866	33	54	7	735	29	0	7 116	155	7 271	2.13	7 419	1 501	8 920
Others	2 111	49	21	24	311	9	1	3	851	14	49	8	323	6	0	3 596	78	3 674	2.12	3 780	945	4 725
Chronic glomerulonephritis	45 532	892	397	603	7 356	306	46	151	21 333	336	826	151	8 592	223	13	82 813	1757	84 570	2.08	86 757	19 947	106 704
Obstructive urinary tract disease	285	6	3	2	52	1	0	0	145	1	5	0	46	3	0	528	11	539	2.04	549	143	692
Undetermined	8351	140	78	67	1 357	52	1	15	3 555	71	234	12	1 429	30	3	14 692	293	14 985	1.96	15 395	4 058	19 453
Reintroduction after transplantation	782	17	12	8	111	4	0	4	384	6	30	4	152	1	0	1 429	28	1 457	1.92	1 515	379	1 894
Myeloma	87	1	1	0	10	1	0	0	39	1	1	1	19	0	0	155	3	158	1.90	161	46	207
Diabetic nephropathy	38 088	656	396	425	5 615	216	19	140	17 888	268	656	95	7 448	164	9	69 039	1304	70 343	1.85	72 083	16 175	88 258
Chronic pyelonephritis	1 442	26	8	18	237	5	0	5	556	9	14	1	215	2	1	2 450	42	2 492	1.69	2 539	599	3 138
Systemic lupus erythematosus nephritis	944	11	12	11	117	6	0	5	437	8	13	4	215	4	1	1 713	29	1 742	1.66	1 788	473	2 261
Hypoplastic kidney	243	3	4	1	23	2	0	0	107	1	9	1	46	1	0	419	7	426	1.64	441	107	548
Nephrosclerosis	7 208	99	64	66	1 218	37	6	35	3 749	46	119	11	1 413	37	2	13 588	219	13 807	1.59	14 110	3 034	17 144
Malignant hypertension	875	12	2	14	139	5	1	9	333	3	8	3	151	4	0	1 498	24	1 522	1.58	1 559	397	1 956
Renal failure due to congenital abnormality of metabolism	103	3	4	0	16	0	0	0	56	0	1	0	19	0	0	194	3	197	1.52	202	60	262
Kidney and urinary tract tumor	298	6	1	3	43	2	0	3	138	0	5	0	54	0	0	533	8	541	1.48	553	91	644
Amyloidal kidney	200	2	1	1	32	0	1	1	115	1	4	1	43	1	0	390	4	394	1.02	403	110	513
Rapidly progressive glomerulonephritis	656	3	7	4	100	3	0	3	410	3	13	2	160	4	2	1 326	13	1 339	0.97	1 370	372	1742
Kidney and urinary tract stone	236	1	0	2	37	2	0	0	130	0	4	1	54	0	0	457	3	460	0.65	467	85	552
Subtotal	113 290	2044	1057	1312	17 778	691	81	398	52 944	820	2083	305	21 518	520	31	205 530	4075	209 605	1.94	214 872	49 379	264 251
No information available	26	0	0	0	3	1	0	0	27	1	1	0	1	0	0	57	2	59	3.39	60	45	105
Total	113 316	2044	1057	1312	17 781	692	81	398	52 971	821	2084	305	21 519	520	31	205 587	4077	209 664	1.94	214 932	49 424	264 356

†HBsAg prevalence (%) = Subtotal-2 ÷ (Subtotal-1 + Subtotal-2).

TABLE 33. *Changes in pre-dialysis hemoglobin concentration (all dialysis patients)*

	Pre-dialysis hemoglobin concentration (g/dL)										
	<8.0	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	≥12.0	Subtotal	No information available	Total	Mean	SD
Patients at the end of 2005	6564	12 707	33 785	45 231	26 608	11 298	136 193	31 919	168 112	10.23	1.37
(%)	(4.8)	(9.3)	(24.8)	(33.2)	(19.5)	(8.3)	(100.0)				
Patients at the end of 2006	9529	21 622	54 878	71 654	40 619	17 876	216 178	33 779	249 957	10.23	1.33
(%)	(4.4)	(10.0)	(25.4)	(33.1)	(18.8)	(8.3)	(100.0)				
Patients at the end of 2007	9604	21 294	55 658	77 395	45 918	18 973	228 842	35 514	264 356	10.27	1.32
(%)	(4.2)	(9.3)	(24.3)	(33.8)	(20.1)	(8.3)	(100.0)				

TABLE 34. *Pre-dialysis hemoglobin and gender (all dialysis patients)*

	Pre-dialysis hemoglobin concentration (g/dL)											
Gender	<7.0	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.0	11.0–11.9	12.0–12.9	≥13.0	Subtotal	No information available	Total	Mean	SD
Male	1790	3788	11 927	31 750	47 152	30 461	9 823	3733	140 424	21 799	162 223	10.36	1.35
(%)	(1.3)	(2.7)	(8.5)	(22.6)	(33.6)	(21.7)	(7.0)	(2.7)	(100.0)				
Female	1189	2836	9 363	23 899	30 237	15 456	4 257	1160	88 397	13 715	102 112	10.13	1.27
(%)	(1.3)	(3.2)	(10.6)	(27.0)	(34.2)	(17.5)	(4.8)	(1.3)	(100.0)				
Subtotal	2979	6624	21 290	55 649	77 389	45 917	14 080	4893	228 821	35 514	264 335	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				
No information available	0	1	4	9	6	1	0	0	21	0	21	9.5	0.88
Total	2979	6625	21 294	55 658	77 395	45 918	14 080	4893	228 842	35 514	264 356	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				

TABLE 35. *Pre-dialysis hemoglobin concentrations and age (all dialysis patients)*

Age (years)	Pre-dialysis hemoglobin concentration (g/dL)								No information available	Total	Mean	SD
	Less than 7	7~	8~	9~	10~	11~	12~	13~	Subtotal				
<15	3	4	6	16	10	11	6	5	61	45	106	10.29	2.09
(%)	(4.9)	(6.6)	(9.8)	(26.2)	(16.4)	(18.0)	(9.8)	(8.2)	(100.0)				
15–29	15	26	97	305	466	365	116	34	1 424	273	1 697	10.5	1.31
(%)	(1.1)	(1.8)	(6.8)	(21.4)	(32.7)	(25.6)	(8.1)	(2.4)	(100.0)				
30–44	126	284	1 026	2 901	4 744	3 415	1 181	456	14 133	2 288	16 421	10.51	1.32
(%)	(0.9)	(2.0)	(7.3)	(20.5)	(33.6)	(24.2)	(8.4)	(3.2)	(100.0)				
45–59	664	1385	4 546	13 038	19 962	12 754	4 365	1661	58 375	9 066	67 441	10.41	1.34
(%)	(1.1)	(2.4)	(7.8)	(22.3)	(34.2)	(21.8)	(7.5)	(2.8)	(100.0)				
60–74	1284	2858	9 391	24 844	34 269	19 779	5 806	1963	100 194	15 127	115 321	10.25	1.3
(%)	(1.3)	(2.9)	(9.4)	(24.8)	(34.2)	(19.7)	(5.8)	(2.0)	(100.0)				
75–89	844	1964	5 931	13 957	17 222	9 230	2 521	752	52 421	8 307	60 728	10.09	1.31
(%)	(1.6)	(3.7)	(11.3)	(26.6)	(32.9)	(17.6)	(4.8)	(1.4)	(100.0)				
≥90	43	104	297	596	720	364	85	22	2231	405	2 636	9.96	1.34
(%)	(1.9)	(4.7)	(13.3)	(26.7)	(32.3)	(16.3)	(3.8)	(1.0)	(100.0)				
Subtotal	2979	6625	21 294	55 657	77 393	45 918	14 080	4893	228 839	35 511	264 350	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				
No information available	0	0	0	1	2	0	0	0	3	3	6	10.27	0.35
Total	2979	6625	21 294	55 658	77 395	45 918	14 080	4893	228 842	35 514	264 356	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				
Mean	66.91	67.31	66.82	65.87	64.76	63.63	62.43	61.33	64.88	64.79	64.87		
SD	12.51	12.48	12.49	12.42	12.50	12.83	12.92	12.82	12.65	13.08	12.71		

iron-binding capacity, transferrin saturation level, and serum ferritin concentration in all the dialysis patients over the past three years. To easily understand the changes, the percentages of the mean values in each year with respect to those in 2005 are also given.

As mentioned above, little change was observed in hemoglobin concentration; however, the serum iron concentration, transferrin saturation level, and serum ferritin concentration tended to increase from 2005 to 2006. In contrast, the total iron-binding capacity decreased. These changes may be due to the inclusion of the price of erythropoietin in the artificial kidney technical fee, which was determined on the basis of the system for medical treatment fee revised in 2006. That is, with the revision of the system, it was considered that a sufficient amount of iron has been supplemented to dialysis patients.

6. Transferrin saturation level

Table 38 shows the relationship between hemoglobin concentration and transferrin saturation level. Patients with high hemoglobin concentrations tended to have high transferrin saturation levels.

7. Serum ferritin concentration

Table 39 shows the relationship between hemoglobin concentration and serum ferritin concentration. Patients with high hemoglobin concentrations tended to have low serum ferritin concentrations.

In anemia therapies, both the serum ferritin concentration and transferrin saturation level are regarded as indices reflecting iron sufficiency. In general, it is understood that the decrease in either of the indices indicates the necessity of iron supplementation. Results of this survey, however, showed that the transferrin saturation level increased with increasing hemoglobin concentration, whereas the serum ferritin concentration decreased with increasing hemoglobin concentration. These findings suggest differences in the roles of iron metabolism between the transferrin saturation level and serum ferritin concentration.

8. Serum C-reactive protein concentration

Table 40 shows the relationship between hemoglobin concentration and serum C-reactive protein (CRP) concentration. For patients with hemoglobin concentrations <10.0 g/dL, the percentage of patients with a high serum CRP concentration increased with decreasing hemoglobin concentration.

D. History of hip fracture

Conventionally, the history of fracture in dialysis patients has not been surveyed; this survey was the

TABLE 36. *Pre-dialysis hemoglobin concentrations and primary disease (all dialysis patients)*

Primary disease	Pre-dialysis hemoglobin concentration (g/dL)								Subtotal	No information available	Total	Mean	SD
	<7.0	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	12.0–12.9	≥13.0					
Chronic glomerulonephritis	1047	2424	7903	22 132	31 863	19 189	6113	2071	92 742	13 962	106 704	10.33	1.31
(%)	(1.1)	(2.6)	(8.5)	(23.9)	(34.4)	(20.7)	(6.6)	(2.2)	(100.0)				
Chronic pyelonephritis	31	80	256	654	918	547	172	53	2 711	427	3 138	10.27	1.32
(%)	(1.1)	(3.0)	(9.4)	(24.1)	(33.9)	(20.2)	(6.3)	(2.0)	(100.0)				
Rapidly progressive glomerulonephritis	23	57	132	357	466	293	95	26	1 449	293	1 742	10.23	1.34
(%)	(1.6)	(3.9)	(9.1)	(24.6)	(32.2)	(20.2)	(6.6)	(1.8)	(100.0)				
Nephropathy of pregnancy/pregnancy toxemia	16	38	135	423	558	301	81	18	1 570	205	1 775	10.22	1.18
(%)	(1.0)	(2.4)	(8.6)	(26.9)	(35.5)	(19.2)	(5.2)	(1.1)	(100.0)				
Other nephritides that cannot be classified	12	36	91	231	352	241	73	23	1 059	155	1 214	10.35	1.35
(%)	(1.1)	(3.4)	(8.6)	(21.8)	(33.2)	(22.8)	(6.9)	(2.2)	(100.0)				
Polycystic kidney	77	181	611	1 843	2 592	1 670	605	301	7 880	1 040	8 920	10.45	1.38
(%)	(1.0)	(2.3)	(7.8)	(23.4)	(32.9)	(21.2)	(7.7)	(3.8)	(100.0)				
Nephrosclerosis	199	456	1 455	3 787	5 119	2 892	767	260	14 935	2 209	17 144	10.20	1.30
(%)	(1.3)	(3.1)	(9.7)	(25.4)	(34.3)	(19.4)	(5.1)	(1.7)	(100.0)				
Malignant hypertension	21	42	161	397	564	315	105	45	1 650	306	1 956	10.29	1.38
(%)	(1.3)	(2.5)	(9.8)	(24.1)	(34.2)	(19.1)	(6.4)	(2.7)	(100.0)				
Diabetic nephropathy	1118	2388	7 796	18 979	25 626	14 771	4471	1553	76 702	11 556	88 258	10.22	1.33
(%)	(1.5)	(3.1)	(10.2)	(24.7)	(33.4)	(19.3)	(5.8)	(2.0)	(100.0)				
Systemic lupus erythematosus nephritis	31	67	194	504	632	362	96	32	1 918	343	2 261	10.14	1.30
(%)	(1.6)	(3.5)	(10.1)	(26.3)	(33.0)	(18.9)	(5.0)	(1.7)	(100.0)				
Amyloidal kidney	4	17	46	107	134	94	24	6	432	81	513	10.21	1.32
(%)	(0.9)	(3.9)	(10.6)	(24.8)	(31.0)	(21.8)	(5.6)	(1.4)	(100.0)				
Gouty kidney	11	30	94	238	374	247	81	33	1 108	149	1 257	10.41	1.34
(%)	(1.0)	(2.7)	(8.5)	(21.5)	(33.8)	(22.3)	(7.3)	(3.0)	(100.0)				
Renal failure due to congenital abnormality of metabolism	3	4	19	51	71	52	15	6	221	41	262	10.38	1.39
(%)	(1.4)	(1.8)	(8.6)	(23.1)	(32.1)	(23.5)	(6.8)	(2.7)	(100.0)				
Kidney and urinary tract tuberculosis	2	10	42	100	97	54	19	8	332	60	392	10.14	1.29
(%)	(0.6)	(3.0)	(12.7)	(30.1)	(29.2)	(16.3)	(5.7)	(2.4)	(100.0)				
Kidney and urinary tract stone	9	15	45	125	160	92	27	7	480	72	552	10.17	1.30
(%)	(1.9)	(3.1)	(9.4)	(26.0)	(33.3)	(19.2)	(5.6)	(1.5)	(100.0)				
Kidney and urinary tract tumor	12	26	82	133	173	124	16	3	569	75	644	9.99	1.28
(%)	(2.1)	(4.6)	(14.4)	(23.4)	(30.4)	(21.8)	(2.8)	(0.5)	(100.0)				
Obstructive urinary tract disease	14	20	46	137	215	104	40	20	596	96	692	10.29	1.40
(%)	(2.3)	(3.4)	(7.7)	(23.0)	(36.1)	(17.4)	(6.7)	(3.4)	(100.0)				
Myeloma	16	12	31	48	37	23	6	2	175	32	207	9.45	1.57
(%)	(9.1)	(6.9)	(17.7)	(27.4)	(21.1)	(13.1)	(3.4)	(1.1)	(100.0)				
Hypoplastic kidney	5	8	40	98	162	114	34	11	472	76	548	10.43	1.30
(%)	(1.1)	(1.7)	(8.5)	(20.8)	(34.3)	(24.2)	(7.2)	(2.3)	(100.0)				
Undetermined	220	523	1589	4 003	5 420	3251	898	296	16 200	3 253	19 453	10.22	1.32
(%)	(1.4)	(3.2)	(9.8)	(24.7)	(33.5)	(20.1)	(5.5)	(1.8)	(100.0)				
Reintroduction after transplantation	26	54	130	357	527	359	119	40	1 612	282	1 894	10.35	1.39
(%)	(1.6)	(3.3)	(8.1)	(22.1)	(32.7)	(22.3)	(7.4)	(2.5)	(100.0)				
Others	82	134	391	935	1 304	812	221	77	3 956	769	4 725	10.20	1.37
(%)	(2.1)	(3.4)	(9.9)	(23.6)	(33.0)	(20.5)	(5.6)	(1.9)	(100.0)				
Total	2979	6622	21 289	55 639	77 364	45 907	14 078	4891	228 769	35 482	264 251	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				
No information available	0	3	5	19	31	11	2	2	73	32	105	10.22	1.20
Total	2979	6625	21 294	55 658	77 395	45 918	14 080	4893	228 842	35 514	264 356	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				

TABLE 37. *Changes in the iron metabolism-related indices over the past three years (facility hemodialysis, hemodiafiltration, hemoadsorption)*

	Hemoglobin concentration (g/dL)			Serum iron concentration (μg/dL)			Total iron-binding capacity (μg/dL)			Transferrin saturation level (%)			Serum ferritin concentration (ng/mL)		
	Mean	SD	vs. 2005† (%)	Mean	SD	vs. 2005† (%)	Mean	SD	vs. 2005† (%)	Mean	SD	vs. 2005† (%)	Mean	SD	vs. 2005† (%)
The end of 2005	10.23	1.37	100.00	62.31	29.38	100.00	246.05	64.38	100.00	26.50	13.82	100.00	191.29	329.38	100.00
The end of 2006	10.23	1.33	100.00	64.65	30.28	103.76	236.96	60.73	96.31	28.39	14.60	107.13	239.59	383.29	125.25
The end of 2007	10.27	1.32	100.39	63.42†	29.54†	101.78	236.85	60.73	96.26	28.09	14.42	106.00	227.54	349.56	118.95

†The percentages of the mean values in each year with respect to those in 2005.

TABLE 38. *Pre-dialysis hemoglobin concentrations and transferrin saturation levels (all dialysis patients)*

Transferrin saturation level (%)	Pre-dialysis hemoglobin concentration (g/dL)								Subtotal	No information available	Total	Mean	SD
	<7.0	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	12.0–12.9	≥13.0					
<10	210	500	1 168	1 855	1 903	1 064	364	111	7 175	55	7 230	9.83	1.47
(%)	(2.9)	(7.0)	(16.3)	(25.9)	(26.5)	(14.8)	(5.1)	(1.5)	(100.0)				
10–19	530	1270	3 930	9 616	12 110	6 961	2 227	811	37 455	280	37 735	10.2	1.34
(%)	(1.4)	(3.4)	(10.5)	(25.7)	(32.3)	(18.6)	(5.9)	(2.2)	(100.0)				
20–29	455	1059	4 011	12 659	19 267	11 424	3 226	1055	53 156	378	53 534	10.36	1.23
(%)	(0.9)	(2.0)	(7.5)	(23.8)	(36.2)	(21.5)	(6.1)	(2.0)	(100.0)				
30–39	318	568	2 199	7 242	11 608	7 099	2 035	617	31 686	204	31 890	10.4	1.25
(%)	(1.0)	(1.8)	(6.9)	(22.9)	(36.6)	(22.4)	(6.4)	(1.9)	(100.0)				
40–49	140	241	997	2 791	4 411	2 860	894	299	12 633	85	12 718	10.41	1.31
(%)	(1.1)	(1.9)	(7.9)	(22.1)	(34.9)	(22.6)	(7.1)	(2.4)	(100.0)				
50–59	60	125	444	1 150	1 652	1 056	356	131	4 974	26	5 000	10.36	1.35
(%)	(1.2)	(2.5)	(8.9)	(23.1)	(33.2)	(21.2)	(7.2)	(2.6)	(100.0)				
≥60	159	265	609	1 332	1 665	1 022	371	110	5 533	33	5 566	10.1	1.48
(%)	(2.9)	(4.8)	(11.0)	(24.1)	(30.1)	(18.5)	(6.7)	(2.0)	(100.0)				
Subtotal	1872	4028	13 358	36 645	52 616	31 486	9 473	3134	152 612	1 061	153 673	10.3	1.3
(%)	(1.2)	(2.6)	(8.8)	(24.0)	(34.5)	(20.6)	(6.2)	(2.1)	(100.0)				
No information available	1107	2597	7 936	19 013	24 779	14 432	4 607	1759	76 230	34 453	110 683	10.21	1.36
Total	2979	6625	21 294	55 658	77 395	45 918	14 080	4893	228 842	35 514	264 356	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				
Mean	28.89	26.48	26.78	27.59	28.32	28.73	28.95	28.53	28.10	26.88	28.09		
SD	20.17	18.34	16.06	14.50	13.67	13.69	14.67	14.58	14.43	13.62	14.42		

TABLE 39. *Pre-dialysis hemoglobin concentrations and serum ferritin concentrations (all dialysis patients)*

Serum ferritin concentration (ng/mL)	Pre-dialysis hemoglobin concentration (g/dL)								Subtotal	No information available	Total	Mean	SD
	<7.0	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	12.0–12.9	≥13.0					
<25	288	627	2 268	5 521	7 517	4 885	1 793	759	23 658	180	23 838	10.36	1.38
(%)	(1.2)	(2.7)	(9.6)	(23.3)	(31.8)	(20.6)	(7.6)	(3.2)	(100.0)				
25–49	240	545	1 742	5 119	7 848	5 205	1 759	767	23 225	154	23 379	10.45	1.35
(%)	(1.0)	(2.3)	(7.5)	(22.0)	(33.8)	(22.4)	(7.6)	(3.3)	(100.0)				
50–99	352	688	2 474	7 781	11 883	7 471	2 221	744	33 614	239	33 853	10.39	1.27
(%)	(1.0)	(2.0)	(7.4)	(23.1)	(35.4)	(22.2)	(6.6)	(2.2)	(100.0)				
100–149	282	592	2 141	6 569	9 920	5 809	1 580	460	27 353	199	27 552	10.32	1.23
(%)	(1.0)	(2.2)	(7.8)	(24.0)	(36.3)	(21.2)	(5.8)	(1.7)	(100.0)				
150–199	221	465	1 707	5 064	7 222	4 287	1 146	288	20 400	156	20 556	10.29	1.24
(%)	(1.1)	(2.3)	(8.4)	(24.8)	(35.4)	(21.0)	(5.6)	(1.4)	(100.0)				
200–299	302	730	2 487	6 961	9 590	5 304	1 421	379	27 174	227	27 401	10.22	1.24
(%)	(1.1)	(2.7)	(9.2)	(25.6)	(35.3)	(19.5)	(5.2)	(1.4)	(100.0)				
300–499	328	796	2 526	6 138	8 250	4 482	1 300	355	24 175	190	24 365	10.17	1.3
(%)	(1.4)	(3.3)	(10.4)	(25.4)	(34.1)	(18.5)	(5.4)	(1.5)	(100.0)				
500–999	280	660	1 750	3 771	4 561	2 617	859	287	14 785	142	14 927	10.1	1.4
(%)	(1.9)	(4.5)	(11.8)	(25.5)	(30.8)	(17.7)	(5.8)	(1.9)	(100.0)				
≥1000	200	293	659	1 164	1 428	919	373	161	5 197	57	5 254	10.05	1.63
(%)	(3.8)	(5.6)	(12.7)	(22.4)	(27.5)	(17.7)	(7.2)	(3.1)	(100.0)				
Subtotal	2493	5396	17 754	48 088	68 219	40 979	12 452	4200	199 581	1 544	201 125	10.29	1.31
(%)	(1.2)	(2.7)	(8.9)	(24.1)	(34.2)	(20.5)	(6.2)	(2.1)	(100.0)				
No information available	486	1229	3540	7 570	9 176	4 939	1 628	693	29 261	33 970	63 231	10.11	1.39
Total	2979	6625	21 294	55 658	77 395	45 918	14 080	4893	228 842	35 514	264 356	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				
Mean	361.73	325.41	268.15	228.58	216.2	209.14	216.83	217.12	227.18	273.71	227.54		
SD	631.31	562.23	404.59	320.89	324.95	314.91	341.85	420.43	348.01	510.53	349.56		

TABLE 40. *Pre-dialysis hemoglobin concentrations and serum C-reactive protein (CRP) concentrations (all dialysis patients)*

Serum CRP concentration (mg/dL)	Pre-dialysis hemoglobin concentration (g/dL)									No information available	Total	Mean	SD
	<7.0	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	12.0–12.9	≥13.0	Subtotal				
<0.2	784	1753	7 063	23 384	36 168	21 736	6 208	1862	98 958	665	99 623	10.39	1.21
(%)	(0.8)	(1.8)	(7.1)	(23.6)	(36.5)	(22.0)	(6.3)	(1.9)	(100.0)				
0.2–0.4	359	880	3 053	8 187	11 831	7 261	2 372	840	34 783	243	35 026	10.34	1.32
(%)	(1.0)	(2.5)	(8.8)	(23.5)	(34.0)	(20.9)	(6.8)	(2.4)	(100.0)				
0.5–0.9	246	641	1 771	4 125	5 243	2 955	936	338	16 255	130	16 385	10.16	1.36
(%)	(1.5)	(3.9)	(10.9)	(25.4)	(32.3)	(18.2)	(5.8)	(2.1)	(100.0)				
1.0–1.9	253	575	1 421	2 694	3 027	1 696	574	207	10 447	79	10 526	9.99	1.46
(%)	(2.4)	(5.5)	(13.6)	(25.8)	(29.0)	(16.2)	(5.5)	(2.0)	(100.0)				
2.0–3.9	197	452	1 073	1 633	1 746	826	278	113	6 318	47	6 365	9.79	1.48
(%)	(3.1)	(7.2)	(17.0)	(25.8)	(27.6)	(13.1)	(4.4)	(1.8)	(100.0)				
4.0–5.9	108	220	440	632	555	275	94	38	2 362	19	2 381	9.59	1.56
(%)	(4.6)	(9.3)	(18.6)	(26.8)	(23.5)	(11.6)	(4.0)	(1.6)	(100.0)				
6.0–7.9	64	144	232	289	283	122	40	23	1 197	11	1 208	9.47	1.59
(%)	(5.3)	(12.0)	(19.4)	(24.1)	(23.6)	(10.2)	(3.3)	(1.9)	(100.0)				
8.0–9.9	46	85	157	176	133	63	26	11	697	8	705	9.3	1.62
(%)	(6.6)	(12.2)	(22.5)	(25.3)	(19.1)	(9.0)	(3.7)	(1.6)	(100.0)				
10.0–14.9	59	108	139	181	167	85	31	12	782	6	788	9.39	1.68
(%)	(7.5)	(13.8)	(17.8)	(23.1)	(21.4)	(10.9)	(4.0)	(1.5)	(100.0)				
≥15.0	41	69	109	133	122	58	18	8	558	4	562	9.35	1.64
(%)	(7.3)	(12.4)	(19.5)	(23.8)	(21.9)	(10.4)	(3.2)	(1.4)	(100.0)				
Subtotal	2157	4927	15 458	41 434	59 275	35 077	10 577	3452	172 357	1 212	173 569	10.28	1.31
(%)	(1.3)	(2.9)	(9.0)	(24.0)	(34.4)	(20.4)	(6.1)	(2.0)	(100.0)				
No information available	822	1698	5 836	14 224	18 120	10 841	3 503	1441	56 485	34 302	90 787	10.24	1.37
Total	2979	6625	21 294	55 658	77 395	45 918	14 080	4893	228 842	35 514	264 356	10.27	1.32
(%)	(1.3)	(2.9)	(9.3)	(24.3)	(33.8)	(20.1)	(6.2)	(2.1)	(100.0)				
Mean	1.98	1.70	1.10	0.66	0.50	0.45	0.49	0.58	0.64	0.82	0.64		
SD	3.99	3.34	2.80	2.09	1.65	1.60	1.70	1.80	2.02	4.11	2.04		

TABLE 41. *History of hip fracture and age (all dialysis patients)*

History of hip fracture	Age (years) <20	20–29	30–39	40–49	50–59	60–69	70–79	80–89	≥90	Subtotal	No information available	Total	Mean	SD
Male														
Without a history	87	743	4082	9 849	26 312	35 719	31 639	10 892	790	120 113	0	120 113	64.06	12.49
With a history	1	2	13	51	226	435	621	328	40	1 717	0	1717	70.51	11.11
Subtotal	88	745	4095	9 900	26 538	36 154	32 260	11 220	830	121 830	0	121 830	64.15	12.49
Fracture prevalence†	114.9	26.9	31.8	51.8	85.9	121.8	196.3	301.1	506.3	142.9	–	142.9		
Unspecified	0	7	40	77	214	345	354	109	7	1 153	0	1 153	65.22	12.29
No information available	47	252	1299	3 206	8 474	11 581	10 410	3 660	307	39 236	4	39 240	64.17	12.60
Total	135	1004	5434	13 183	35 226	48 080	43 024	14 989	1144	162 219	4	162 223	64.16	12.52
Female														
Without a history	62	412	2052	5 165	14 909	20 877	19 726	9 801	996	74 000	1	74 001	65.75	12.83
With a history	1	4	16	29	181	441	941	779	117	2 509	0	2 509	74.60	10.65
Subtotal	63	416	2068	5 194	15 090	21 318	20 667	10 580	1113	76 509	1	76 510	66.04	12.86
Fracture prevalence†	161.3	97.1	78.0	56.1	121.4	211.2	477.0	794.8	1174.7	339.1	0.0	339.0		
Unspecified	1	4	17	48	137	204	219	128	8	766	0	766	67.04	13.02
No information available	33	147	716	1 777	4 968	6 847	6 584	3 392	371	24 835	1	24 836	65.78	13.10
Total	97	567	2801	7 019	20 195	28 369	27 470	14 100	1492	102 110	2	102 112	65.98	12.92

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

TABLE 42. *History of hip fracture and duration of dialysis (all dialysis patients)*

History of hip fracture	Durations of dialysis (years) <2	2–4	5–9	10–14	15–19	20–24	≥25	Total	Mean	SD
Without a history	45 747	50 271	48 547	23 732	12 101	7082	6655	194 135	6.80	6.95
With a history	895	1 099	1 044	459	242	159	328	4 226	7.83	8.34
Subtotal	46 642	51 370	49 591	24 191	12 343	7241	6983	198 361	6.82	6.99
Fracture prevalence†	195.6	218.6	215.0	193.4	200.0	224.5	492.9	217.7		
Unspecified	562	430	439	230	125	62	71	1 919	6.61	7.26
No information available	14 934	16 770	16 046	7849	4 004	2300	2173	64 076	6.79	6.95
Total	62 138	68 570	66 076	32 270	16 472	9603	9227	264 356	6.81	6.98

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

TABLE 43. *History of hip fracture and presence or absence of diabetes mellitus (all dialysis patients)*

History of hip fracture	Diabetic	Non-diabetic	Subtotal	No information available	Total
Male					
Without a history	43 751	76 330	120 081	32	120 113
With a history	704	1 013	1 717	0	1 717
Subtotal	44 455	77 343	121 798	32	121 830
Fracture prevalence†	160.9	132.7	143.0	–	142.9
Unspecified	499	654	1 153	0	1 153
No information available	14 116	25 085	39 201	39	39 240
Total	59 070	103 082	162 152	71	162 223
Female					
Without a history	21 223	52 769	73 992	9	74 001
With a history	859	1 649	2 508	1	2 509
Subtotal	22 082	54 418	76 500	10	76 510
Fracture prevalence†	404.7	312.5	339.0	1111.1	339.0
Unspecified	231	535	766	0	766
No information available	6 863	17 949	24 812	24	24 836
Total	29 176	72 902	102 078	34	102 112

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

first to ask patients about the history of hip fracture as a fracture-related question. The rate of patients with a history of hip fracture per 10 000 dialysis patients is described as the "fracture prevalence" (equal to 100-fold of the percentage of patients with a history of fracture with respect to the total number of dialysis patients). It is known that bone metabolism markedly differs between male and female patients and between diabetic and non-diabetic patients; therefore, fracture prevalences were summarized according to gender, and then according to the presence or absence of diabetes mellitus.

1. Tabulation according to gender

a. Gender. Table 41 shows the relationship between the history of hip fracture and age in male and female patients. The fracture prevalence in all the male patients was 142.9, whereas that in all the female patients was 339.0, which was more than twice that in all the male patients.

b. Age. The relationship between the fracture prevalence and age was examined using the data shown in Table 41. In both male and female patients the fracture prevalence increased with age. The fracture prevalence in female patients was higher than that in male patients in all age groups. In particular, the gender difference was marked in patients aged 70 years or older.

c. Duration of dialysis. The fracture prevalences are summarized according to the duration of dialysis in Table 42. The total fracture prevalences in all the patients are shown by each duration because the durations of dialysis are not tabulated according to gender. The fracture prevalence sharply and discontinuously increased with dialysis durations exceeding 25 years.

d. Presence or absence of diabetes mellitus. Table 43 shows the relationship between the history of hip fracture and the presence or absence of diabetes mellitus. In both males and females, the fracture prevalence in diabetic patients was higher than that in non-diabetic patients.

e. Body mass index (BMI). Table 44 shows the relationship between a history of hip fracture and BMI. In both male and female patients, the lower the BMI, the higher the fracture prevalence. This suggests that malnourished patients are more prone to fracture.

f. Pre-dialysis serum creatinine concentration. Table 45 shows the relationship between the history of hip fracture and pre-dialysis serum creatinine concentration. In both male and female patients, the fracture prevalence increased with decreasing serum creatinine concentration. This also suggests that, similar to BMI, malnourished patients are more prone to fracture.

g. Pre-dialysis serum albumin concentration prior to starting dialysis. Table 46 shows the relationship between the history of hip fracture and pre-dialysis serum albumin concentration prior to starting

TABLE 44. *History of hip fracture and body mass index (BMI) (all dialysis patients)*

History of hip fracture	BMI (kg/m²) <12	12–13	14–15	16–17	18–19	20–21	22–23	24–25	26–27	28–29	30–31	32–33	34–35	36–37	≥38	Subtotal	No information available	Total	Mean	SD
Male																				
Without a history	89	253	2104	9 496	21 282	26 157	19 737	10 513	4585	1929	818	386	189	95	146	97 779	22 334	120 113	21.50	3.69
With a history	2	15	100	257	371	324	185	67	23	11	3	0	1	0	3	1 362	355	1717	19.99	5.43
Subtotal	91	268	2204	9 753	21 653	26 481	19 922	10 580	4608	1940	821	386	190	95	149	99 141	22 689	121 830	21.48	3.73
Fracture prevalence†	224.7	592.9	475.3	270.6	174.3	123.9	93.7	63.7	50.2	57.0	36.7	0.0	52.9	0.0	205.5	139.3	159.0	142.9		
Unspecified	0	1	20	78	172	221	140	82	41	18	8	6	2	1	1	791	362	1 153	21.55	3.42
No information available	4	29	280	1 129	2 536	3 188	2 401	1 241	514	250	104	30	20	7	18	11 751	27 489	39 240	21.51	4.09
Total	95	298	2504	10 960	24 361	29 890	22 463	11 903	5163	2208	933	422	212	103	168	111 683	50 540	162 223	21.48	3.76
Female																				
Without a history	80	465	3266	10 108	14 785	12 970	8 448	4 786	2509	1272	576	298	149	67	80	59 859	14 142	74 001	20.69	4.05
With a history	7	48	183	468	503	369	220	88	34	16	9	2	1	2	0	1 950	559	2 509	19.34	3.25
Subtotal	87	513	3449	10 576	15 288	13 339	8 668	4 874	2543	1288	585	300	150	69	80	61 809	14 701	76 510	20.65	4.03
Fracture prevalence†	875.0	1032.3	560.3	463.0	340.2	284.5	260.4	183.9	135.5	125.8	156.3	67.1	67.1	298.5	0.0	325.8	395.3	339.0		
Unspecified	0	11	35	95	129	116	66	36	20	16	6	4	4	1	1	540	226	766	20.56	4.09
No information available	9	65	387	1 302	1 846	1 589	1 039	599	323	133	82	33	17	6	10	7 440	17 396	24 836	20.70	4.80
Total	96	589	3871	11 973	17 263	15 044	9 773	5 509	2886	1437	673	337	171	76	91	69 789	32 323	102 112	20.65	4.12

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

TABLE 45. *History of hip fracture and pre-dialysis serum creatinine concentration (all dialysis patients)*

History of hip fracture	Pre-dialysis serum creatinine concentration (mg/dL) <4.0	4.0–5.9	6.0–7.9	8.0–9.9	10.0–11.9	12.0–13.9	14.0–15.9	≥16.0	Subtotal	No information available	Total	Mean	SD
Male													
Without a history	1551	5012	12 714	23 031	29 940	26 066	14 459	6050	118 823	1 290	120 113	11.03	3.13
With a history	37	158	343	476	437	180	50	12	1693	24	1 717	9.21	2.67
Subtotal	1588	5170	13 057	23 507	30 377	26 246	14 509	6062	120 516	1 314	121 830	11.01	3.13
Fracture prevalence†	238.6	315.2	269.8	206.7	146.0	69.1	34.6	19.8	142.5	186.0	142.9		
Unspecified	22	61	134	264	292	201	94	35	1 103	50	1 153	10.41	3.05
No information available	274	845	2 046	4 013	5 243	4 454	2 477	1117	20 469	18 771	39 240	11.09	3.14
Total	1884	6076	15 237	27 784	35 912	30 901	17 080	7214	142 088	20 135	162 223	11.02	3.13
Female													
Without a history	1717	5341	13 593	22 780	19 939	8 100	1 450	271	73 191	810	74 001	9.29	2.56
With a history	117	407	870	738	267	59	7	2	2 467	42	2 509	7.62	2.25
Subtotal	1834	5748	14 463	23 518	20 206	8 159	1 457	273	75 658	852	76 510	9.24	2.57
Fracture prevalence†	681.4	762.0	640.0	324.0	133.9	72.8	48.3	73.8	337.1	518.5	339.0		
Unspecified	30	75	175	228	184	51	7	0	750	16	766	8.63	2.43
No information available	289	941	2 372	3 994	3 656	1 483	235	49	13 019	11 817	24 836	9.34	2.57
Total	2153	6764	17 010	27 740	24 046	9 693	1 699	322	89 427	12 685	102 112	9.24	2.57

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

TABLE 46. *History of hip fracture and pre-dialysis serum albumin (all dialysis patients)*

History of hip fracture	Pre-dialysis serum albumin concentration (g/dL) <3.0	3.0–3.4	3.5–3.9	4.0–4.4	≥4.5	Subtotal	No information available	Total	Mean	SD
Male										
Without a history	5182	18 332	54 480	32 273	3226	113 493	6 620	120 113	3.74	0.44
With a history	199	410	731	258	21	1 619	98	1 717	3.52	0.49
Subtotal	5381	18 742	55 211	32 531	3247	115 112	6 718	121 830	3.74	0.44
Fracture prevalence†	384.0	223.7	134.2	79.9	65.1	142.7	148.0	142.9		
Unspecified	59	201	593	222	9	1 084	69	1 153	3.66	0.42
No information available	894	3 089	9 229	5 481	597	19 290	19 950	39 240	3.74	0.44
Total	6334	22 032	65 033	38 234	3853	135 486	26 737	162 223	3.74	0.44
Female										
Without a history	3419	12 636	35 564	17 286	1189	70 094	3 907	74 001	3.70	0.42
With a history	284	741	1 020	270	17	2 332	177	2 509	3.47	0.47
Subtotal	3703	13 377	36 584	17 556	1206	72 426	4 084	76 510	3.69	0.43
Fracture prevalence†	830.7	586.4	286.8	156.2	143.0	332.7	453.0	339.0		
Unspecified	64	166	385	116	4	735	31	766	3.57	0.46
No information available	595	2 248	6 233	2 933	239	12 248	12 588	24 836	3.70	0.43
Total	4362	15 791	43 202	20 605	1449	85 409	16 703	102 112	3.69	0.43

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

dialysis. In both male and female patients the fracture prevalence increased with decreasing serum albumin concentration. This also suggests that, similar to BMI and serum creatinine concentration, malnourished patients are more prone to fracture.

h. Percutaneous ethanol injection therapy (PEIT). Table 47 shows the relationship between the history of hip fracture and the use of PEIT for secondary hyperparathyroidism. In both males and females, the fracture prevalence in patients who had been treated with PEIT was clearly higher than that in patients who had not been treated.

i. Parathyroidectomy (PTx). Table 48 shows the relationship between the history of hip fracture and treatment of secondary hyperparathyroidism with PTx. Similarly to the results for PEIT, the fracture prevalence was higher in patients who had been treated with PTx than in those who had not been treated.

j. Serum intact parathyroid hormone (iPTH) concentration. Table 49 shows the relationship between the history of hip fracture and serum iPTH concentration. The fracture prevalences in male patients with serum iPTH concentrations of 140–800 pg/mL were

TABLE 47. *History of hip fracture and treatment with percutaneous ethanol injection therapy (PEIT) (all dialysis patients)*

History of hip fracture	PEIT treatment No	Yes	Subtotal	Unspecified	No information available	Total
Male						
Without a history	116 336	956	117 292	1441	1 380	120 113
With a history	1 534	74	1 608	39	70	1 717
Subtotal	117 870	1030	118 900	1480	1 450	121 830
Fracture prevalence†	131.9	774.1	137.1	270.6	507.2	142.9
Unspecified	159	8	167	980	6	1 153
No information available	955	62	1 017	2	38 221	39 240
Total	118 984	1100	120 084	2462	39 677	162 223
Female						
Without a history	71 424	781	72 205	924	872	74 001
With a history	2 270	74	2 344	59	106	2 509
Subtotal	73 694	855	74 549	983	978	76 510
Fracture prevalence†	317.8	947.5	324.6	638.5	1 215.6	339.0
Unspecified	143	1	144	619	3	766
No information available	598	50	648	0	24 188	24 836
Total	74 435	906	75 341	1602	25 169	102 112

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

TABLE 48. *History of hip fracture and treatment with parathyroidectomy (PTx) (all dialysis patients)*

History of hip fracture	PTx performed		Subtotal	Unspecified	No information available	Total
	No	Yes				
Male						
Without a history	112 956	5115	118 071	951	1 091	120 113
With a history	1 474	154	1 628	28	61	1 717
Subtotal	114 430	5269	119 699	979	1 152	121 830
Fracture prevalence†	130.5	301.1	137.9	294.4	559.1	142.9
Unspecified	263	10	273	874	6	1 153
No information available	1 425	288	1 713	3	37 524	39 240
Total	116 118	5567	121 685	1856	38 682	162 223
Female						
Without a history	68 115	4626	72 741	591	669	74 001
With a history	2 188	177	2 365	44	100	2 509
Subtotal	70 303	4803	75 106	635	769	76 510
Fracture prevalence†	321.2	382.6	325.1	744.5	1 494.8	339.0
Unspecified	166	12	178	585	3	766
No information available	835	284	1 119	0	23 717	24 836
Total	71 304	5099	76 403	1220	24 489	102 112

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

relatively lower than those in the other male patients, and the fracture prevalences in female patients with serum iPTH concentrations of 60–600 pg/mL were relatively lower than those in the other female patients. Outside these serum iPTH concentration ranges the fracture prevalence tended to be high in both male and female patients.

(1) Tabulation considering BMI

As described above, the history of fracture is strongly related to BMI; therefore, the relationship between the history of hip fracture and serum iPTH concentration was examined by taking the classification according to BMI into consideration, which is shown in the three-dimensional graphs in Figure 3. Here, the graphs were prepared on the basis of the data collected as of June 2008 (2). In patients with a low BMI, a U-shaped relationship was observed between the serum iPTH concentration and the fracture prevalence, with both excessively high and low serum iPTH concentrations related to a high fracture prevalence. This tendency weakened with increasing BMI, showing little relationship between serum iPTH concentration and the fracture prevalence in patients with a high BMI.

(2) Tabulation considering serum albumin concentration

Similarly, the relationship between the history of hip fracture and serum iPTH concentration was examined by taking the classification according to serum albumin concentration into consideration, which is shown in three-dimensional graphs in Figure 4. These graphs were also prepared on the basis of the data collected as of June 2008 (2). Similarly to the case of BMI, a U-shaped relationship was observed between serum iPTH concentration and the fracture prevalence in patients with low serum albumin concentrations. A weak relationship was observed between serum iPTH concentration and the fracture prevalence in patients with high serum albumin concentrations.

k. Pre-dialysis serum calcium concentration. Table 50 shows the relationship between the history of hip fracture and pre-dialysis serum calcium concentration. The serum calcium concentrations shown in this table were corrected using serum albumin concentrations using the equation shown below (when the serum albumin concentration is <4.0 g/dL):

Corrected serum Ca concentration (mg/dL) =
Serum Ca concentration (mg/dL) +
(4.0 – Serum albumin concentration (g/dL))

In male patients, it is clear that the fracture prevalence decreased with decreasing serum calcium concentration, and increased with increasing serum calcium concentration. A similar tendency was observed in female patients; however, the fracture prevalence was also high in female patients with serum calcium concentrations <7.0 mg/dL, which is different from the male patients.

2. Pre-dialysis serum phosphorus

Table 51 shows the relationship between the history of hip fracture and pre-dialysis serum phosphorus concentration. In both males and females, the fracture prevalence increased with decreasing

TABLE 49. *History of hip fracture and serum intact parathyroid hormone (iPTH) concentration (all dialysis patients)*

History of hip fracture	Serum iPTH concentration (pg/mL)														No information available	Total	Mean	SD
	<20	20–39	40–59	60–79	80–99	100–119	120–139	140–159	160–179	180–199	200–359	360–599	600–799	800–999	≥1000	Subtotal				
Male																				
Without a history	5629	7992	7398	7334	7162	6867	6782	6154	5457	5053	22 079	8413	2043	859	887	100 109	20 004	120 113	192.49	201.44
With a history	100	111	112	107	106	114	107	81	66	69	274	111	24	13	19	1 414	303	1 717	195.48	279.09
Subtotal	5729	8103	7510	7441	7268	6981	6889	6235	5523	5122	22 353	8524	2067	872	906	101 523	20 307	121 830	192.53	202.73
Fracture prevalence†	177.7	138.9	151.4	145.9	148.0	166.0	157.8	131.6	120.9	136.6	124.1	131.9	117.5	151.3	214.2	141.2	151.5	142.9		
Unspecified	62	119	104	66	76	50	54	51	55	34	172	57	14	4	1	919	234	1 153	154.81	157.84
No information available	838	1181	1026	1070	1076	1012	903	964	827	817	3 569	1390	330	159	158	15 320	23 920	39 240	201.98	211.90
Total	6629	9403	8640	8577	8420	8043	7846	7250	6405	5973	26 094	9971	2411	1035	1065	117 762	44 461	162 223	193.46	203.69
Female																				
Without a history	3636	5315	4787	4518	4403	4055	3746	3663	3117	2912	13 231	5631	1419	715	704	61 852	12 149	74 001	199.98	220.11
With a history	130	224	185	138	147	141	127	104	104	89	398	140	54	18	42	2 041	468	2 509	201.97	282.04
Subtotal	3766	5539	4972	4656	4550	4196	3873	3767	3221	3001	13 629	5771	1473	733	746	63 893	12 617	76 510	200.04	222.35
Fracture prevalence†	357.5	421.4	386.5	305.4	333.9	347.7	339.0	283.9	333.7	305.6	300.8	248.6	380.5	251.7	596.6	330.0	385.2	339.0		
Unspecified	42	78	52	46	38	44	46	42	23	22	117	36	11	6	2	605	161	766	166.06	173.71
No information available	555	838	747	686	650	633	585	518	512	463	2 137	983	243	135	155	9840	14 996	24 836	213.24	245.10
Total	4363	6455	5771	5388	5238	4873	4504	4327	3756	3486	15 883	6790	1727	874	903	74 338	27 774	102 112	201.51	225.21

†Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

serum phosphorus concentrations, and decreased with increasing serum phosphorus concentrations.

3. Tabulation according to the presence or absence of diabetes mellitus

The following results are based on the data collected as of June 2008 (2).

a. Serum iPTH concentration and BMI. Figure 5 shows three-dimensional graphs obtained by summarizing the relationship between the fracture prevalence, serum iPTH concentration, and BMI separately in diabetic and non-diabetic patients. Note that the scale of the fracture prevalence in the graph for diabetic patients is much greater than that for non-diabetic patients because the rate in the former is higher than that in the latter generally.

In the diabetic patients with a low BMI, there was a clear relationship between serum iPTH concentration and fracture prevalence; specifically, the fracture prevalence in patients with high serum iPTH concentration was very high. Moreover, the fracture prevalence tended to be rather high in patients with low serum iPTH concentrations; however, the relationship between serum iPTH concentration and the fracture prevalence weakened as BMI increased.

For the non-diabetic patients with a low BMI there was some relationship between the serum iPTH concentration and the fracture prevalence. Unlike in diabetic patients, however, the fracture prevalence in the non-diabetic patients with low serum iPTH concentrations tended to be rather high, and the increase in the fracture prevalence in patients with high serum iPTH concentrations was not so marked; however, the relationship between the serum iPTH concentration and the fracture prevalence weakened as BMI increased, similarly to the case of diabetic patients.

b. Serum iPTH and serum albumin concentrations. Figure 6 shows three-dimensional graphs obtained by summarizing the relationship between the fracture prevalence, serum iPTH concentration, and serum albumin concentration separately in diabetic and non-diabetic patients. Note that the scale of fracture prevalence in the graph for diabetic patients is much greater than that for non-diabetic patients.

The tendency in serum albumin concentration was similar to that in BMI. That is, for diabetic patients with a low serum albumin concentration, a U-shaped relationship was found between serum iPTH concentration and the fracture prevalence, where the fracture prevalence was high for both the high and low

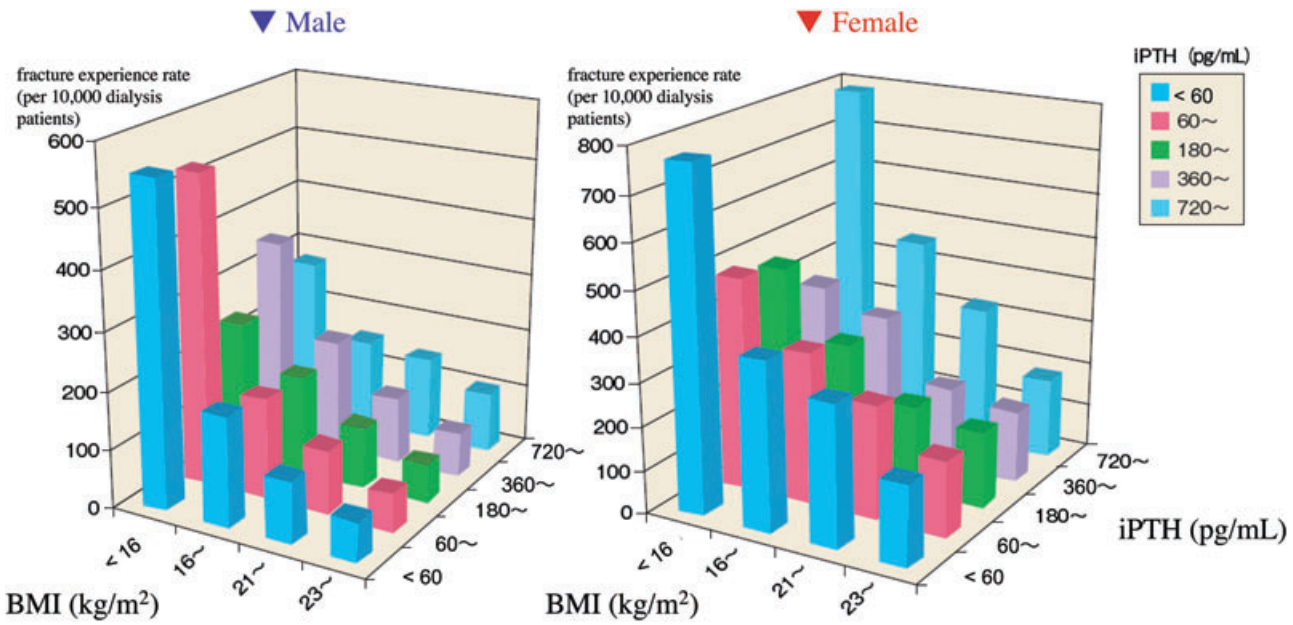

FIG. 3. Relationship between the history of hip fracture, serum intact parathyroid hormone concentration (iPTH), and body mass index (BMI) (all dialysis patients).

serum iPTH concentrations. The increase in the fracture prevalence in the high serum iPTH concentration region was significant.

For non-diabetic patients with low serum albumin concentrations there was also a clear relationship between serum iPTH concentration and the fracture prevalence; however, a marked increase in the fracture prevalence was observed in non-diabetic patients with low serum iPTH concentrations, unlike in diabetic patients. For both diabetic and non-diabetic patients, the relationship between serum iPTH concentration and the fracture prevalence was weak in the region of high serum albumin concentration.

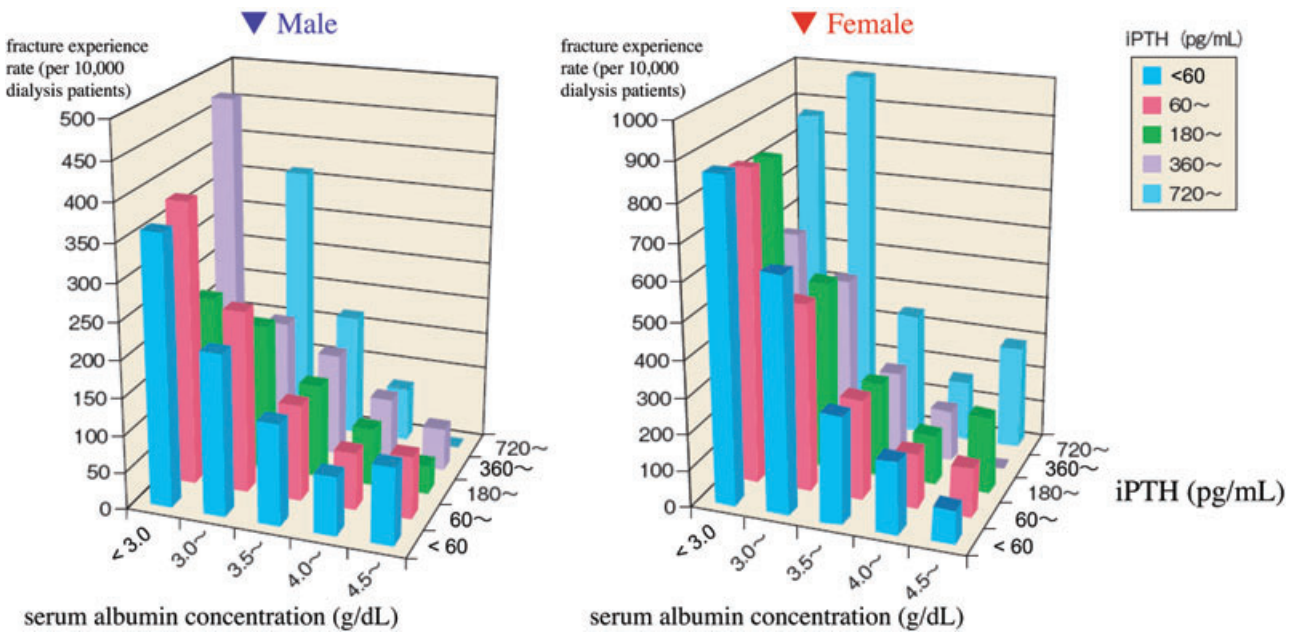

FIG. 4. Relationship between the history of hip fracture, serum intact parathyroid hormone concentration (iPTH), and serum albumin concentration (all dialysis patients).

TABLE 50. *History of hip fracture and corrected pre-dialysis serum calcium concentration[†] (all dialysis patients)*

History of hip fracture	Corrected pre-dialysis serum calcium concentration[†] (mg/dL)																		
	<6.0	6.0–6.4	6.5–6.9	7.0–7.4	7.5–7.9	8.0–8.4	8.5–8.9	9.0–9.4	9.5–9.9	10.0–10.4	10.5–10.9	11.0–11.4	11.5–11.9	≥12.0	Subtotal	No information available	Total	Mean	SD
Male																			
Without a history	114	147	308	958	3414	12 307	26 081	28 119	20 295	12 279	5747	2081	774	566	113 190	6 923	120 113	9.25	0.89
With a history	1	2	3	4	51	144	388	390	307	160	93	36	16	15	1 610	107	1 717	9.31	0.94
Subtotal	115	149	311	962	3465	12 451	26 469	28 509	20 602	12 439	5840	2117	790	581	114 800	7 030	121 830	9.25	0.89
Fracture prevalence[‡]	87.7	136.1	97.4	41.8	149.4	117.0	148.8	138.7	151.3	130.3	161.8	173.0	206.7	265.0	142.2	154.6	142.9		
Unspecified	0	1	2	7	20	118	264	255	201	128	61	10	5	8	1 080	73	1 153	9.29	0.87
No information available	27	33	59	172	625	2 106	4 082	4 557	3 253	2 052	1008	370	125	164	18 633	20 607	39 240	9.28	1.03
Total	142	183	372	1141	4110	14 675	30 815	33 321	24 056	14 619	6909	2497	920	753	134 513	27 710	162 223	9.25	0.91
Female																			
Without a history	62	74	137	423	1381	4 902	12 785	17 872	15 152	9 492	4724	1762	666	469	69 901	4 100	74 001	9.44	0.91
With a history	3	2	6	12	36	170	466	576	466	272	183	69	33	29	2 323	186	2 509	9.46	0.98
Subtotal	65	76	143	435	1417	5 072	13 251	18 448	15 618	9 764	4907	1831	699	498	72 224	4 286	76 510	9.44	0.91
Fracture prevalence[‡]	483.9	270.3	438.0	283.7	260.7	346.8	364.5	322.3	307.6	286.6	387.4	391.6	495.5	618.3	332.3	453.7	339.0		
Unspecified	0	1	1	2	9	45	133	189	163	109	44	26	6	7	735	31	766	9.49	0.91
No information available	10	16	30	63	221	839	2 206	3 020	2 461	1 612	877	297	117	115	11 884	12 952	24 836	9.46	1.02
Total	75	93	174	500	1647	5 956	15 590	21 657	18 242	11 485	5828	2154	822	620	84 843	17 269	102 112	9.44	0.93

[†]When the serum albumin concentration is <4.0 g/dL: Corrected serum calcium concentration (mg/dL) = Serum calcium concentration (mg/dL) + (4.0 – Serum albumin concentration (g/dL)). [‡]Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

TABLE 51. *History of hip fracture and pre-dialysis serum phosphorus concentration (all dialysis patients)*

History of hip fracture	Pre-dialysis serum phosphorus concentration (mg/dL)									No information available			
	<3.0	3.0–3.9	4.0–4.9	5.0–5.9	6.0–6.9	7.0–7.9	8.0–8.9	≥9.0	Subtotal		Total	Mean	SD
Male													
Without a history	5198	15 487	30 054	32 411	20 541	8 988	3695	2187	118 561	1 552	120 113	5.30	1.51
With a history	140	299	466	416	233	85	32	18	1 689	28	1 717	4.90	1.50
Subtotal	5338	15 786	30 520	32 827	20 774	9 073	3727	2205	120 250	1 580	121 830	5.29	1.51
Fracture prevalence[†]	269.3	193.1	155.1	128.4	113.4	94.6	86.6	82.3	142.5	180.4	142.9		
Unspecified	46	147	293	310	179	66	32	14	1 087	66	1 153	5.20	1.43
No information available	923	2 535	4 971	5 430	3 510	1 537	574	358	19 838	19 402	39 240	5.29	1.51
Total	6307	18 468	35 784	38 567	24 463	10 676	4333	2577	141 175	21 048	162 223	5.29	1.51
Female													
Without a history	3398	9 463	19 515	20 557	12 336	4 981	1798	1019	73 067	934	74 001	5.22	1.46
With a history	215	449	713	603	289	115	49	19	2 452	57	2 509	4.80	1.46
Subtotal	3613	9 912	20 228	21 160	12 625	5 096	1847	1038	75 519	991	76 510	5.20	1.46
Fracture prevalence[†]	632.7	474.5	365.4	293.3	234.3	230.9	272.5	186.5	335.6	610.3	339.0		
Unspecified	41	123	219	184	110	42	18	8	745	21	766	5.03	1.47
No information available	663	1 661	3 176	3 523	2 288	860	285	172	12 628	12 208	24 836	5.21	1.46
Total	4317	11 696	23 623	24 867	15 023	5 998	2150	1218	88 892	13 220	102 112	5.20	1.46

[†]Fracture prevalence: the rate of patients with a history of hip fracture per 10 000 dialysis patients.

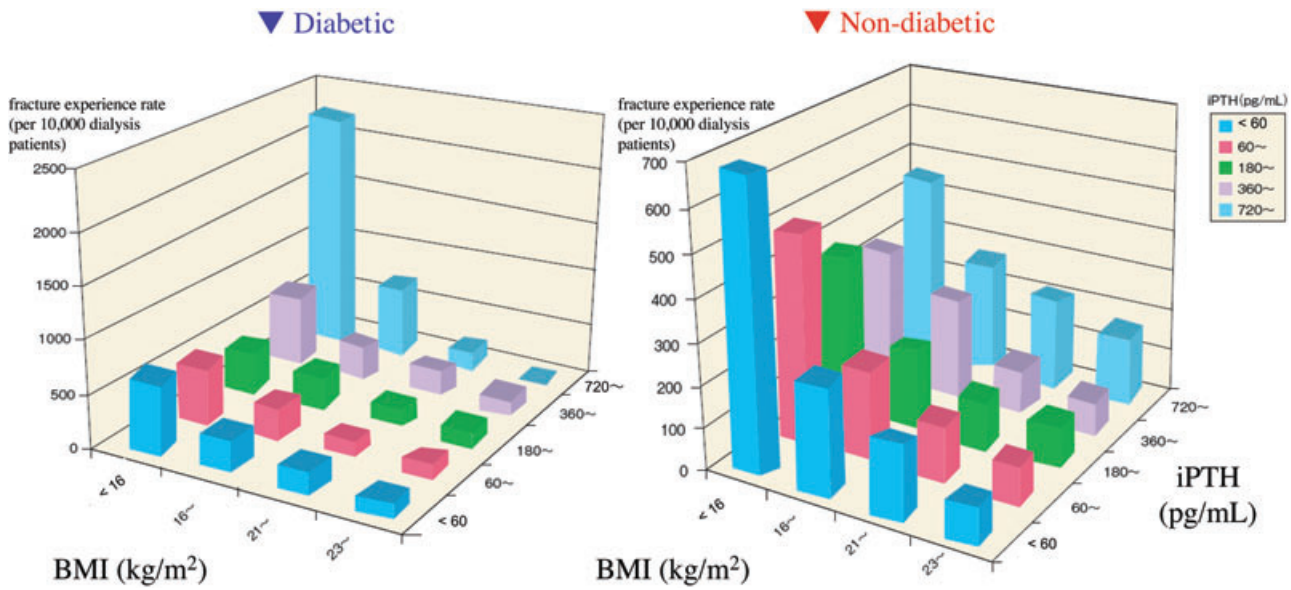

FIG. 5. Relationship between the history of hip fracture, serum intact parathyroid hormone concentration (iPTH), and body mass index (BMI) (all dialysis patients categorized into diabetic and non-diabetic groups). Note: the scale of fracture prevalence in the graph for diabetic patients is greater than that for non-diabetic patients.

c. Serum calcium and phosphorus concentrations. Figure 7 shows three-dimensional graphs obtained by summarizing the relationship between the serum calcium and phosphorus concentrations, and the fracture prevalence separately for diabetic and non-diabetic patients. No matter whether the patients are diabetic or non-diabetic, the fracture prevalence increased with decreasing serum phosphorus concentration and with increasing corrected serum calcium concentration prior to the dialysis session.

E. Clinical condition of patients at the start of dialysis

In the survey conducted at the end of 2007, the clinical condition of the patients when dialysis was

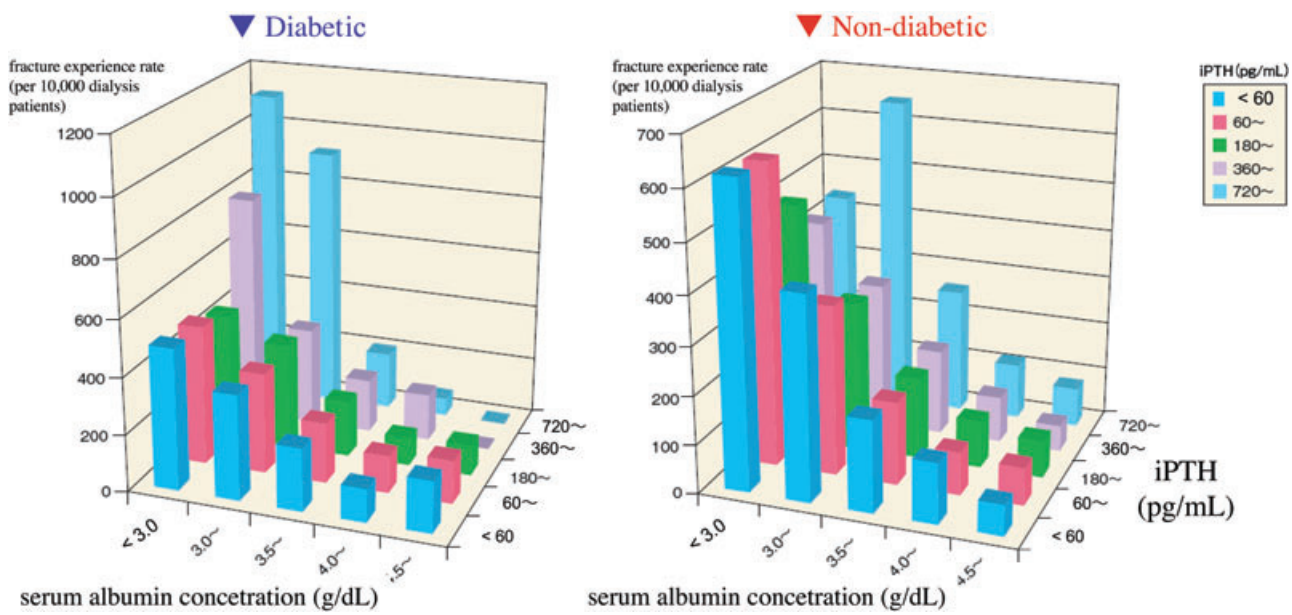

FIG. 6. Relationship between the history of hip fracture, serum intact parathyroid hormone concentration (iPTH), and serum albumin concentration (all dialysis patients categorized into diabetic and non-diabetic groups). Note: the scale of fracture prevalence in the graph for diabetic patients is greater than that for non-diabetic patients.

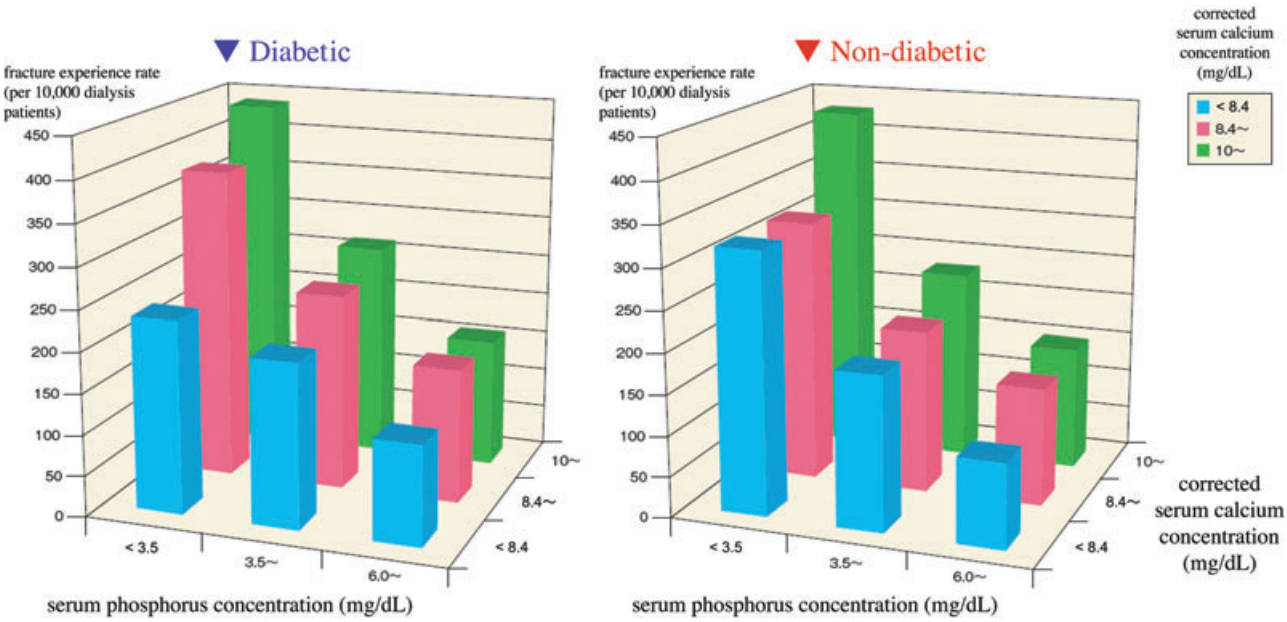

FIG. 7. Relationship between the history of hip fracture, corrected serum calcium concentration, and serum phosphorus concentration prior to the introduction to dialysis (all dialysis patients). Note 1: fracture prevalence for diabetic patients is greater than that for non-diabetic patients. Note 2: when the serum albumin concentration is <4.0 g/dL, the following equation is used: Corrected serum calcium concentration (mg/dL) = Serum calcium concentration (mg/dL) + (4.0 – Serum albumin concentration [g/dL]).

fist carried out was examined following the previous survey. The subjects of the survey on the clinical condition should be the patients who were newly begun on dialysis in 2007 and responded to the questionnaire using floppy disks concerning their clinical condition. The number of patients who satisfied these criteria was 30 510 (male, 19 748; female, 10 762). The survey results regarding renal function were analyzed for the 17 765 patients whose data were available at the start of dialysis.

The following are the summaries of the treatment methods for end-stage renal failure, the renal function of the patients when beginning dialysis, as well as major symptoms experienced at the start of dialysis.

1. Treatment methods at the end of the first year of dialysis

Table 52 shows a summary of treatment methods for renal failure examined at the end of 2007 for all subject patients. The following are the treatment methods examined at the end of 2007 for the patients who began dialysis in 2007, of whom 92.0% underwent hemodialysis. The percentages of patients who underwent hemodiafiltration (2.5%) and peritoneal dialysis (5.4%) were slightly higher than those in the previous year (the results of the 2006 survey were: facility hemodialysis, 92.4%; hemodiafiltration, 2.2%; hemofiltration, 0.2%; hemoabsorption, 0.0%; home hemodialysis, 0.0%; continuous ambulatory peritoneal dialysis (CAPD), 5.0%; and intermittent peritoneal dialysis (IPD), 0.2% (1)).

2. Clinical symptoms and signs of patients at the introduction of dialysis

Table 53 shows a summary of the various clinical symptoms and signs and disorders experienced by the patients with respect to the items related to the clinical symptoms included in the criteria for the introduction of dialysis in patients with chronic renal failure (CRF) (12), which was provided by a renal failure research group of the Ministry of Health, Labor and Welfare, and those related to the calculation of Carlsson's scores (13). Regarding the symptoms related to the criteria for the introduction of dialysis in CRF patients, digestive symptoms, retention of body fluid, and fluid abnormalities were observed in approximately one-half of the patients. Following these symptoms, blood abnormalities and cardiovascular symptoms were observed in approximately 40% of the patients; moreover, impaired eyesight was observed in 22.9%, and nervous disorder symptoms in 13.8% of the patients. The percentages of these symptoms were almost the same as those in the 2006 survey. Regarding the items related to Carlsson's score, diabetes mellitus, congestive cardiac failure, and brain infarction were observed as major contributing factors.

TABLE 52. *Pre-dialysis serum creatinine concentrations of the first dialysis and treatment methods used at the end of 2007 (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

Method of dialysis	Pre-dialysis serum creatinine concentration of the first dialysis (mg/dL)																	Subtotal		No information available	Total		Mean	SD
	<2.0	2.0–2.9	3.0–3.9	4.0–4.9	5.0–5.9	6.0–6.9	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	12.0–12.9	13.0–13.9	14.0–14.9	15.0–15.9	16.0–16.9	17.0–17.9	18.0–18.9	19.0–19.9	≥20.0		%†				
Facility hemodialysis	91	308	623	1116	1625	1971	2310	2510	1837	1251	827	553	367	221	176	112	82	66	45	170	16 261	91.5	11 798	28 059	92.0	8.32	3.55
(%)	(0.6)	(1.9)	(3.8)	(6.9)	(10.0)	(12.1)	(14.2)	(15.4)	(11.3)	(7.7)	(5.1)	(3.4)	(2.3)	(1.4)	(1.1)	(0.7)	(0.5)	(0.4)	(0.3)	(1.0)	(100.0)						
Hemodiafiltration	7	13	19	46	64	72	82	96	53	38	24	18	6	9	4	3	4	6		9	573	3.2	193	766	2.5	8.16	3.85
(%)	(1.2)	(2.3)	(3.3)	(8.0)	(11.2)	(12.6)	(14.3)	(16.8)	(9.2)	(6.6)	(4.2)	(3.1)	(1.0)	(1.6)	(0.7)	(0.5)	(0.7)	(1.0)		(1.6)	(100.0)						
Hemofiltration	0	0	0	2	2	2	1	1	1	0	0	1	0	0	0	0	0	0	0	0	10	0.1	12	22	0.1	6.99	2.32
(%)	(0.0)	(0.0)	(0.0)	(20.0)	(20.0)	(20.0)	(10.0)	(10.0)	(10.0)	(0.0)	(0.0)	(10.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)						
Hemoadsorption	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	3	3	0.0	–	–
(%)																											
Home hemodialysis	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	0.0	1	3	0.0	12.35	1.63
(%)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(50.0)	(0.0)	(50.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)						
Peritoneal dialysis	6	10	22	41	61	121	118	185	99	80	60	34	24	19	9	10	3	1	2	14	919	5.2	738	1 657	5.4	8.77	3.34
(%)	(0.7)	(1.1)	(2.4)	(4.5)	(6.6)	(13.2)	(12.8)	(20.1)	(10.8)	(8.7)	(6.5)	(3.7)	(2.6)	(2.1)	(1.0)	(1.1)	(0.3)	(0.1)	(0.2)	(1.5)	(100.0)						
Total	104	331	664	1205	1752	2166	2511	2792	1990	1369	912	606	398	249	189	125	89	73	47	193	17 765	100.0	12 745	30 510	100.0	8.34	3.55
(%)	(0.6)	(1.9)	(3.7)	(6.8)	(9.9)	(12.2)	(14.1)	(15.7)	(11.2)	(7.7)	(5.1)	(3.4)	(2.2)	(1.4)	(1.1)	(0.7)	(0.5)	(0.4)	(0.3)	(1.1)	(100.0)						

†Percentage of the left cell value relative to the total number of its column. Values in parentheses below each figure represent the percentage relative to the total of each row.

3. Pre-dialysis serum creatinine concentration of the first dialysis

The pre-dialysis serum creatinine concentration of the first dialysis (hereafter, serum creatinine concentrations at the introduction of dialysis) are summarized below.

a. Treatment method at the end of the first year of dialysis. The relationship between the treatment method at the end of the first year of dialysis and the serum creatinine concentration at that time is already shown in Table 52. No clear difference in the trend of serum creatinine concentration at the start of dialysis was observed between the treatment methods.

b. Gender. Table 54 shows the relationship between the serum creatinine concentration at the introduction to dialysis and gender. The mean serum creatinine concentrations in male and female patients at the introduction to dialysis were 8.69 and 7.69 mg/dL, respectively; the level was higher in male patients than in female patients. Both levels were nearly the same as those in the 2006 survey.

c. Age. Table 55 shows the relationship between the serum creatinine concentration at the introduction to dialysis and age. The serum creatinine concentration at the introduction to dialysis in patients aged less than 15 years was low, and that in patients aged 15 years or older tended to decrease with age.

d. Primary disease. Table 56 shows the relationship between the serum creatinine concentration at the introduction to dialysis and primary disease. The serum creatinine concentration at the introduction to dialysis in patients with diabetic nephropathy as the primary disease was lower than that in patients with chronic glomerulonephritis.

4. Estimated glomerular filtration rate of patients at the introduction to dialysis. The estimated glomerular filtration rate (eGFR) (mL/min/1.73 m^2) of patients was calculated and tabulated in terms of gender, age, and serum creatinine concentration of the patients at the introduction to dialysis. The eGFR was obtained by multiplying the value obtained using the modification of diet in renal disease (MDRD) equation by the Japanese factor (14).

When the serum creatinine concentration was measured by the Jaffe method, the following equation was used:

TABLE 53. *Items related to clinical symptoms at the introduction of dialysis (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

Clinical symptoms and signs or disorder at the introduction of dialysis	Symptom free	Experiencing symptoms	Subtotal	Unspecified	No information available	Total
Retention of body fluid: generalized edema, severe hypoproteinemia, pneumonedema	7 421	7541	14 962	502	15 046	30 510
(%)	(49.6)	(50.4)	(100.0)			
Fluid abnormality: uncontrollable electrolyte and acid–base imbalance	7 572	7210	14 782	611	15 117	30 510
(%)	(51.2)	(48.8)	(100.0)			
Digestive system: nausea, vomiting, loss of appetite, diarrhea	7 169	7549	14 718	658	15 134	30 510
(%)	(48.7)	(51.3)	(100.0)			
Cardiovascular system: serious hypertension, cardiac failure, pericarditis	9 101	5611	14 712	539	15 259	30 510
(%)	(61.9)	(38.1)	(100.0)			
Nervous system: central and peripheral nervous disorder, mental disorder	12 696	2035	14 731	647	15 132	30 510
(%)	(86.2)	(13.8)	(100.0)			
Blood abnormalities: severe anemia, bleeding tendency	8 594	6245	14 839	498	15 173	30 510
(%)	(57.9)	(42.1)	(100.0)			
Impaired eyesight: uremic retinopathy, diabetic retinopathy	11 243	3343	14 586	825	15 099	30 510
(%)	(77.1)	(22.9)	(100.0)			
History of cardiac infarction before the start of dialysis	14 620	1558	16 178	371	13 961	30 510
(%)	(90.4)	(9.6)	(100.0)			
Congestive cardiac failure	11 625	4465	16 090	364	14 056	30 510
(%)	(72.2)	(27.8)	(100.0)			
History of quadruple amputation, complication of arteriosclerosis obliterans, or aortic aneurysm ≥6 cm	15 295	1055	16 350	261	13 899	30 510
(%)	(93.5)	(6.5)	(100.0)			
History of brain infarction or transient ischaemic attack	13 711	2458	16 169	398	13 943	30 510
(%)	(84.8)	(15.2)	(100.0)			
Dementia	14 871	1412	16 283	225	14 002	30 510
(%)	(91.3)	(8.7)	(100.0)			
Chronic lung disease	15 557	592	16 149	253	14 108	30 510
(%)	(96.3)	(3.7)	(100.0)			
Collagen diseases	15 786	410	16 196	227	14 087	30 510
(%)	(97.5)	(2.5)	(100.0)			
Peptic ulcer	14 539	876	15 415	739	14 356	30 510
(%)	(94.3)	(5.7)	(100.0)			
Chronic hepatic disease (without portal hypertension) or chronic hepatitis	15 145	970	16 115	233	14 162	30 510
(%)	(94.0)	(6.0)	(100.0)			
Diabetes mellitus (without end-stage organ damage, patients treated by dietary therapy alone are not included)	11 605	4302	15 907	257	14 346	30 510
(%)	(73.0)	(27.0)	(100.0)			
Hemiplegia	15 231	952	16 183	182	14 145	30 510
(%)	(94.1)	(5.9)	(100.0)			
Diabetes mellitus: severe retinopathy, nervous disorder, renal disorder, labile diabetes	10 452	5530	15 982	249	14 279	30 510
(%)	(65.4)	(34.6)	(100.0)			
Malignant tumors (those without metastasis and who have survived five years since diagnosis are not included)	15 188	994	16 182	234	14 094	30 510
(%)	(93.9)	(6.1)	(100.0)			
Leukemia (acute and chronic)	16 146	109	16 255	175	14 080	30 510
(%)	(99.3)	(0.7)	(100.0)			
Lymphoma	16 065	113	16 178	233	14 099	30 510
(%)	(99.3)	(0.7)	(100.0)			
Moderate and end-stage hepatic disease	15 782	430	16 212	188	14 110	30 510
(%)	(97.3)	(2.7)	(100.0)			
Metastasizing malignant tumors	15 897	257	16 154	232	14 124	30 510
(%)	(98.4)	(1.6)	(100.0)			
Acquired immunodeficiency syndrome	13 544	75	13 619	2724	14 167	30 510
(%)	(99.4)	(0.6)	(100.0)			

TABLE 54. *Pre-dialysis serum creatinine concentration at the introduction to dialysis and gender (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

	Pre-dialysis serum creatinine concentration at the introduction to dialysis (mg/dL)																								
Gender	<2.0	2.0–2.9	3.0–3.9	4.0–4.9	5.0–5.9	6.0–6.9	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	12.0–12.9	13.0–13.9	14.0–14.9	15.0–15.9	16.0–16.9	17.0–17.9	18.0–18.9	19.0–19.9	≥20.0	Subtotal	No information available	Total	Mean	SD
Male	49	149	334	633	1017	1290	1643	1850	1366	961	673	446	296	186	144	91	67	61	40	149	11 445	8 303	19 748	8.69	3.61
(%)	(0.4)	(1.3)	(2.9)	(5.5)	(8.9)	(11.3)	(14.4)	(16.2)	(11.9)	(8.4)	(5.9)	(3.9)	(2.6)	(1.6)	(1.3)	(0.8)	(0.6)	(0.5)	(0.3)	(1.3)	(100.0)				
Female	55	182	330	572	735	876	868	942	624	408	239	160	102	63	45	34	22	12	7	44	6 320	4 442	10 762	7.69	3.35
(%)	(0.9)	(2.9)	(5.2)	(9.1)	(11.6)	(13.9)	(13.7)	(14.9)	(9.9)	(6.5)	(3.8)	(2.5)	(1.6)	(1.0)	(0.7)	(0.5)	(0.3)	(0.2)	(0.1)	(0.7)	(100.0)				
Subtotal	104	331	664	1205	1752	2166	2511	2792	1990	1369	912	606	398	249	189	125	89	73	47	193	17 765	12 745	30 510	8.34	3.55
(%)	(0.6)	(1.9)	(3.7)	(6.8)	(9.9)	(12.2)	(14.1)	(15.7)	(11.2)	(7.7)	(5.1)	(3.4)	(2.2)	(1.4)	(1.1)	(0.7)	(0.5)	(0.4)	(0.3)	(1.1)	(100.0)				
No information available	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	104	331	664	1205	1752	2166	2511	2792	1990	1369	912	606	398	249	189	125	89	73	47	193	17 765	12 745	30 510	8.34	3.55
(%)	(0.6)	(1.9)	(3.7)	(6.8)	(9.9)	(12.2)	(14.1)	(15.7)	(11.2)	(7.7)	(5.1)	(3.4)	(2.2)	(1.4)	(1.1)	(0.7)	(0.5)	(0.4)	(0.3)	(1.1)	(100.0)				

Values in parentheses below each figure represent the percentage relative to the total of each row.

TABLE 55. *Pre-dialysis serum creatinine concentration at the introduction to dialysis and age (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

	Pre-dialysis serum creatinine concentrations at the introduction to dialysis (mg/dL)																								
Age (years)	<2.0	2.0–2.9	3.0–3.9	4.0–4.9	5.0–5.9	6.0–6.9	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	12.0–12.9	13.0–13.9	14.0–14.9	15.0–15.9	16.0–16.9	17.0–17.9	18.0–18.9	19.0–19.9	≥20.0	Subtotal	No information available	Total	Mean	SD
< 15	0	1	1	2	1	1	4	0	1	0	0	0	0	0	0	0	0	0	0	0	11	17	28	5.83	1.93
(%)	(0.0)	(9.1)	(9.1)	(18.2)	(9.1)	(9.1)	(36.4)	(0.0)	(9.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
15–29	0	2	2	4	3	4	3	15	8	17	11	11	9	5	8	3	6	8	3	12	134	117	251	12.81	5.55
(%)	(0.0)	(1.5)	(1.5)	(3.0)	(2.2)	(3.0)	(2.2)	(11.2)	(6.0)	(12.7)	(8.2)	(8.2)	(6.7)	(3.7)	(6.0)	(2.2)	(4.5)	(6.0)	(2.2)	(9.0)	(100.0)				
30–4	1	8	12	26	41	59	71	118	114	87	85	57	47	26	29	19	20	18	18	44	900	706	1 606	10.96	4.91
(%)	(0.1)	(0.9)	(1.3)	(2.9)	(4.6)	(6.6)	(7.9)	(13.1)	(12.7)	(9.7)	(9.4)	(6.3)	(5.2)	(2.9)	(3.2)	(2.1)	(2.2)	(2.0)	(2.0)	(4.9)	(100.0)				
45–59	9	39	77	143	214	320	414	591	468	372	246	186	124	78	65	52	28	19	13	78	3 536	2 421	5 957	9.44	3.88
(%)	(0.3)	(1.1)	(2.2)	(4.0)	(6.1)	(9.0)	(11.7)	(16.7)	(13.2)	(10.5)	(7.0)	(5.3)	(3.5)	(2.2)	(1.8)	(1.5)	(0.8)	(0.5)	(0.4)	(2.2)	(100.0)				
60–74	43	102	246	426	687	898	1081	1203	902	586	387	238	164	106	65	37	28	22	11	42	7 274	5 193	12 467	8.29	3.13
(%)	(0.6)	(1.4)	(3.4)	(5.9)	(9.4)	(12.3)	(14.9)	(16.5)	(12.4)	(8.1)	(5.3)	(3.3)	(2.3)	(1.5)	(0.9)	(0.5)	(0.4)	(0.3)	(0.2)	(0.6)	(100.0)				
75–89	46	163	306	573	767	848	914	837	480	297	179	110	53	34	22	14	7	6	2	17	5 675	4 087	9 762	7.27	3.01
(%)	(0.8)	(2.9)	(5.4)	(10.1)	(13.5)	(14.9)	(16.1)	(14.7)	(8.5)	(5.2)	(3.2)	(1.9)	(0.9)	(0.6)	(0.4)	(0.2)	(0.1)	(0.1)	(0.0)	(0.3)	(100.0)				
≥ 90	5	15	20	30	39	36	24	28	17	10	4	4	1	0	0	0	0	0	0	0	233	188	421	6.33	2.48
(%)	(2.1)	(6.4)	(8.6)	(12.9)	(16.7)	(15.5)	(10.3)	(12.0)	(7.3)	(4.3)	(1.7)	(1.7)	(0.4)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Subtotal	104	330	664	1204	1752	2166	2511	2792	1990	1369	912	606	398	249	189	125	89	73	47	193	17 763	12 729	30 492	8.34	3.55
(%)	(0.6)	(1.9)	(3.7)	(6.8)	(9.9)	(12.2)	(14.1)	(15.7)	(11.2)	(7.7)	(5.1)	(3.4)	(2.2)	(1.4)	(1.1)	(0.7)	(0.5)	(0.4)	(0.3)	(1.1)	(100.0)				
No information available	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	16	18	3.35	1.77
Total	104	331	664	1205	1752	2166	2511	2792	1990	1369	912	606	398	249	189	125	89	73	47	193	17 765	12 745	30 510	8.34	3.55
(%)	(0.6)	(1.9)	(3.7)	(6.8)	(9.9)	(12.2)	(14.1)	(15.7)	(11.2)	(7.7)	(5.1)	(3.4)	(2.2)	(1.4)	(1.1)	(0.7)	(0.5)	(0.4)	(0.3)	(1.1)	(100.0)				
Mean	73.23	72.85	72.28	72.31	71.58	70.34	69.29	67.18	65.60	63.99	62.75	61.85	60.22	60.19	56.31	56.90	53.80	52.55	49.02	52.56	67.37	67.29	67.33		
SD	10.62	13.44	11.65	12.00	11.54	11.64	11.62	12.27	12.47	12.88	13.30	13.27	13.61	13.34	14.55	13.78	15.06	17.20	13.93	15.40	13.08	13.41	13.22		

Values in parentheses below each figure represent the percentage relative to the total of each row.

TABLE 56. *Pre-dialysis serum creatinine concentration at the introduction to dialysis and primary diseases (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

	Pre-dialysis serum creatinine concentrations at the introduction to dialysis (mg/dL)																								
Primary disease	<2.0	2.0–2.9	3.0–3.9	4.0–4.9	5.0–5.9	6.0–6.9	7.0–7.9	8.0–8.9	9.0–9.9	10.0–10.9	11.0–11.9	12.0–12.9	13.0–13.9	14.0–14.9	15.0–15.9	16.0–16.9	17.0–17.9	18.0–18.9	19.0–19.9	≥20.0	Subtotal	No information available	Total	Mean	SD
Chronic glomerulonephritis	19	58	99	203	339	426	535	661	482	352	242	169	113	80	72	38	30	30	19	75	4042	2 958	7 000	9.03	4.04
(%)	(0.5)	(1.4)	(2.4)	(5.0)	(8.4)	(10.5)	(13.2)	(16.4)	(11.9)	(8.7)	(6.0)	(4.2)	(2.8)	(2.0)	(1.8)	(0.9)	(0.7)	(0.7)	(0.5)	(1.9)	(100.0)				
Chronic pyelonephritis		1	4	4	15	12	16	19	15	18	8	5	6	2	2	4	0	1	0	1	133	81	214	9.12	3.80
(%)		(0.8)	(3.0)	(3.0)	(11.3)	(9.0)	(12.0)	(14.3)	(11.3)	(13.5)	(6.0)	(3.8)	(4.5)	(1.5)	(1.5)	(3.0)	(0.0)	(0.8)	(0.0)	(0.8)	(100.0)				
Rapidly progressive glomerulonephritis	1	7	9	23	30	39	34	34	33	22	18	15	12	6	3	3	1	1	1	3	295	216	511	8.50	3.52
(%)	(0.3)	(2.4)	(3.1)	(7.8)	(10.2)	(13.2)	(11.5)	(11.5)	(11.2)	(7.5)	(6.1)	(5.1)	(4.1)	(2.0)	(1.0)	(1.0)	(0.3)	(0.3)	(0.3)	(1.0)	(100.0)				
Nephropathy of pregnancy / pregnancy toxemia	0	0	0	3	2	3	6	4	3	3	1	1	0	1	0	0	0	0	0	1	28	11	39	9.04	5.36
(%)	(0.0)	(0.0)	(0.0)	(10.7)	(7.1)	(10.7)	(21.4)	(14.3)	(10.7)	(10.7)	(3.6)	(3.6)	(0.0)	(3.6)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(3.6)	(100.0)				
Other nephritides that cannot be classified	0	1	5	1	6	8	8	13	9	9	3	5	5	1	3	0	1	2	0	1	81	50	131	9.31	3.65
(%)	(0.0)	(1.2)	(6.2)	(1.2)	(7.4)	(9.9)	(9.9)	(16.0)	(11.1)	(11.1)	(3.7)	(6.2)	(6.2)	(1.2)	(3.7)	(0.0)	(1.2)	(2.5)	(0.0)	(1.2)	(100.0)				
Polycystic kidney disease	1	0	2	11	24	50	74	88	51	41	32	17	13	9	7	4	4	0	2	9	439	255	694	9.37	3.77
(%)	(0.2)	(0.0)	(0.5)	(2.5)	(5.5)	(11.4)	(16.9)	(20.0)	(11.6)	(9.3)	(7.3)	(3.9)	(3.0)	(2.1)	(1.6)	(0.9)	(0.9)	(0.0)	(0.5)	(2.1)	(100.0)				
Nephrosclerosis	7	30	73	142	212	277	302	344	227	165	105	56	43	27	15	13	12	8	2	12	2072	1 308	3 380	8.16	3.06
(%)	(0.3)	(1.4)	(3.5)	(6.9)	(10.2)	(13.4)	(14.6)	(16.6)	(11.0)	(8.0)	(5.1)	(2.7)	(2.1)	(1.3)	(0.7)	(0.6)	(0.6)	(0.4)	(0.1)	(0.6)	(100.0)				
Malignant hypertension	0	1	1	1	8	14	11	16	11	10	6	4	7	1	1	4	2	1	1	3	103	85	188	9.91	4.17
(%)	(0.0)	(1.0)	(1.0)	(1.0)	(7.8)	(13.6)	(10.7)	(15.5)	(10.7)	(9.7)	(5.8)	(3.9)	(6.8)	(1.0)	(1.0)	(3.9)	(1.9)	(1.0)	(1.0)	(2.9)	(100.0)				
Diabetic nephropathy	49	157	343	595	867	1047	1187	1235	896	551	362	234	139	81	56	36	21	18	11	48	7933	5 438	13 371	7.94	3.20
(%)	(0.6)	(2.0)	(4.3)	(7.5)	(10.9)	(13.2)	(15.0)	(15.6)	(11.3)	(6.9)	(4.6)	(2.9)	(1.8)	(1.0)	(0.7)	(0.5)	(0.3)	(0.2)	(0.1)	(0.6)	(100.0)				
Systemic lupus erythematosus nephritis	1	5	11	24	11	13	21	19	12	8	3	5	1	1	0	0	1	0	1	1	138	87	225	7.24	3.43
(%)	(0.7)	(3.6)	(8.0)	(17.4)	(8.0)	(9.4)	(15.2)	(13.8)	(8.7)	(5.8)	(2.2)	(3.6)	(0.7)	(0.7)	(0.0)	(0.0)	(0.7)	(0.0)	(0.7)	(0.7)	(100.0)				
Amyloidal kidney	1	4	4	10	16	9	12	14	6	4	4		2	1	0	0	0	0	0	0	87	70	157	6.97	2.60
(%)	(1.1)	(4.6)	(4.6)	(11.5)	(18.4)	(10.3)	(13.8)	(16.1)	(6.9)	(4.6)	(4.6)		(2.3)	(1.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Gouty kidney	0	1	4	1	1	7	7	13	11	2	3	2	2	3	3	1	2	0	0	0	63	22	85	9.32	3.49
(%)	(0.0)	(1.6)	(6.3)	(1.6)	(1.6)	(11.1)	(11.1)	(20.6)	(17.5)	(3.2)	(4.8)	(3.2)	(3.2)	(4.8)	(4.8)	(1.6)	(3.2)	(0.0)	(0.0)	(0.0)	(100.0)				
Renal failure due to congenital abnormal metabolism	0	1	1	1	1	3	4	4	3	0	3	1	1	0	1	0	1	0	0	0	25	10	35	8.91	3.66
(%)	(0.0)	(4.0)	(4.0)	(4.0)	(4.0)	(12.0)	(16.0)	(16.0)	(12.0)	(0.0)	(12.0)	(4.0)	(4.0)	(0.0)	(4.0)	(0.0)	(4.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Kidney and urinary tract tuberculosis	0	1	1	1	0	0	5	2	0	2	0	0	0	0	0	0	0	0	0	0	12	4	16	7.14	2.61
(%)	(0.0)	(8.3)	(8.3)	(8.3)	(0.0)	(0.0)	(41.7)	(16.7)	(0.0)	(16.7)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Kidney and urinary tract stone	0	1	0	2	2	5	5	2	5	4	2	3	1	0	0	0	0	0	3	2	37	17	54	10.27	5.14
(%)	(0.0)	(2.7)	(0.0)	(5.4)	(5.4)	(13.5)	(13.5)	(5.4)	(13.5)	(10.8)	(5.4)	(8.1)	(2.7)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(8.1)	(5.4)	(100.0)				
Kidney and urinary tract tumor	3	2	7	3	8	8	12	6	7	6	4	2	2	1	2	2	0	0	0	1	76	68	144	7.95	3.82
(%)	(3.9)	(2.6)	(9.2)	(3.9)	(10.5)	(10.5)	(15.8)	(7.9)	(9.2)	(7.9)	(5.3)	(2.6)	(2.6)	(1.3)	(2.6)	(2.6)	(0.0)	(0.0)	(0.0)	(1.3)	(100.0)				
Obstructive urinary tract difficulty	0	0	0	2	4	3	9	9	9	6	3	3	1	0	2	0	1	1	1	1	55	42	97	9.93	4.31
(%)	(0.0)	(0.0)	(0.0)	(3.6)	(7.3)	(5.5)	(16.4)	(16.4)	(16.4)	(10.9)	(5.5)	(5.5)	(1.8)	(0.0)	(3.6)	(0.0)	(1.8)	(1.8)	(1.8)	(1.8)	(100.0)				
Myeloma	0	0	4	0	1	9	11	16	8	9	4	5	0	2	1	0	1	1	1	2	75	64	139	9.52	3.56
(%)	(0.0)	(0.0)	(5.3)	(0.0)	(1.3)	(12.0)	(14.7)	(21.3)	(10.7)	(12.0)	(5.3)	(6.7)	(0.0)	(2.7)	(1.3)	(0.0)	(1.3)	(1.3)	(1.3)	(2.7)	(100.0)				
Hypoplastic kidney	1	1	1	2	0	3	2	6	0	3	2	1	1	1	0	0	0	1	0	3	28	19	47	10.07	5.80
(%)	(3.6)	(3.6)	(3.6)	(7.1)	(0.0)	(10.7)	(7.1)	(21.4)	(0.0)	(10.7)	(7.1)	(3.6)	(3.6)	(3.6)	(0.0)	(0.0)	(0.0)	(3.6)	(0.0)	(10.7)	(100.0)				
Unspecified	9	40	64	124	145	184	192	230	148	120	94	65	42	29	20	14	8	7	5	28	1 568	1 457	3 025	8.50	3.83
(%)	(0.6)	(2.6)	(4.1)	(7.9)	(9.2)	(11.7)	(12.2)	(14.7)	(9.4)	(7.7)	(6.0)	(4.1)	(2.7)	(1.8)	(1.3)	(0.9)	(0.5)	(0.4)	(0.3)	(1.8)	(100.0)				
Reintroduction after transplantation	0	0	1	4	5	4	10	11	6	1	0	4	2	0	1	2	0	0	0	0	51	40	91	8.53	3.08
(%)	(0.0)	(0.0)	(2.0)	(7.8)	(9.8)	(7.8)	(19.6)	(21.6)	(11.8)	(2.0)	(0.0)	(7.8)	(3.9)	(0.0)	(2.0)	(3.9)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Others	12	20	30	47	55	42	45	46	48	31	13	9	5	3	0	4	4	2	0	2	418	348	766	7.26	3.40
(%)	(2.9)	(4.8)	(7.2)	(11.2)	(13.2)	(10.0)	(10.8)	(11.0)	(11.5)	(7.4)	(3.1)	(2.2)	(1.2)	(0.7)	(0.0)	(1.0)	(1.0)	(0.5)	(0.0)	(0.5)	(100.0)				
Subtotal	104	331	664	1204	1752	2166	2508	2792	1990	1367	912	606	398	249	189	125	89	73	47	193	17 759	12 650	30 409	8.34	3.55
(%)	(0.6)	(1.9)	(3.7)	(6.8)	(9.9)	(12.2)	(14.1)	(15.7)	(11.2)	(7.7)	(5.1)	(3.4)	(2.2)	(1.4)	(1.1)	(0.7)	(0.5)	(0.4)	(0.3)	(1.1)	(100.0)				
No information available	0	0	0	1	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	6	95	101	7.97	2.19
Total	104	331	664	1205	1752	2166	2511	2792	1990	1369	912	606	398	249	189	125	89	73	47	193	17 765	12 745	30 510	8.34	3.55
(%)	(0.6)	(1.9)	(3.7)	(6.8)	(9.9)	(12.2)	(14.1)	(15.7)	(11.2)	(7.7)	(5.1)	(3.4)	(2.2)	(1.4)	(1.1)	(0.7)	(0.5)	(0.4)	(0.3)	(1.1)	(100.0)				

Values in parentheses below each figure represent the percentage relative to the total of each row.

TABLE 57. *Estimated glomerular filtration rates (eGFR) at the introduction to dialysis and the treatment methods used at the end of year of introduction (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

	eGFR at the introduction to dialysis (mL/min/1.73 m^2)																					
Method of dialysis	<1.0	1.0–1.9	2.0–2.9	4.0–5.9	6.0–7.9	8.0–9.9	10.0–11.9	12.0–13.9	14.0–15.9	16.0–17.9	18.0–19.9	20.0–21.9	22.0–23.9	24.0–25.9	26.0–27.9	28.0–29.9	≥30.0	Subtotal	No information available	Total	Mean	SD
Facility hemodialysis	22	326	4513	5390	2126	843	370	203	106	87	47	26	12	15	13	5	29	14 133	13 926	28 059	5.44	3.39
(%)	(0.2)	(2.3)	(31.9)	(38.1)	(15.0)	(6.0)	(2.6)	(1.4)	(0.8)	(0.6)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				
Hemodiafiltration	1	9	123	176	61	26	9	7	1	7	2	2	1	1	1	1	0	428	338	766	5.70	3.63
(%)	(0.2)	(2.1)	(28.7)	(41.1)	(14.3)	(6.1)	(2.1)	(1.6)	(0.2)	(1.6)	(0.5)	(0.5)	(0.2)	(0.2)	(0.2)	(0.2)	(0.0)	(100.0)				
Hemofiltration	0	0	1	5	3	1	0	0	0	0	0	0	0	0	0	0	0	10	12	22	5.86	1.82
(%)	(0.0)	(0.0)	(10.0)	(50.0)	(30.0)	(10.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Hemoadsorption	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	–	–
(%)																						
Home hemodialysis	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3.25	0.25
(%)	(0.0)	(0.0)	(100.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Peritoneal dialysis	0	12	273	315	96	35	14	6	4	0	1	1	1	0	1	1	3	763	894	1 657	5.19	4.11
(%)	(0.0)	(1.6)	(35.8)	(41.3)	(12.6)	(4.6)	(1.8)	(0.8)	(0.5)	(0.0)	(0.1)	(0.1)	(0.1)	(0.0)	(0.1)	(0.1)	(0.4)	(100.0)				
Total	23	347	4912	5886	2286	905	393	216	111	94	50	29	14	16	15	7	32	15 336	15 174	30 510	5.43	3.43
(%)	(0.1)	(2.3)	(32.0)	(38.4)	(14.9)	(5.9)	(2.6)	(1.4)	(0.7)	(0.6)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				

Values in parentheses below each figure represent the percentage relative to the total of each row.

TABLE 58. *Estimated glomerular filtration rates (eGFR) at the introduction to dialysis and gender (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

	eGFR at introduction into dialysis (mL/min/1.73 m^2)																					
Gender	<1.0	1.0–1.9	2.0–2.9	4.0–5.9	6.0–7.9	8.0–9.9	10.0–11.9	12.0–13.9	14.0–15.9	16.0–17.9	18.0–19.9	20.0–21.9	22.0–23.9	24.0–25.9	26.0–27.9	28.0–29.9	≥30.0	Subtotal	No information available	Total	Mean	SD
Male	10	174	2515	4169	1649	661	280	153	68	65	35	16	8	14	8	3	21	9 849	9 899	19 748	5.68	3.49
(%)	(0.1)	(1.8)	(25.5)	(42.3)	(16.7)	(6.7)	(2.8)	(1.6)	(0.7)	(0.7)	(0.4)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				
Female	13	173	2397	1717	637	244	113	63	43	29	15	13	6	2	7	4	11	5 487	5 275	10 762	4.99	3.29
(%)	(0.2)	(3.2)	(43.7)	(31.3)	(11.6)	(4.4)	(2.1)	(1.1)	(0.8)	(0.5)	(0.3)	(0.2)	(0.1)	(0.0)	(0.1)	(0.1)	(0.2)	(100.0)				
Subtotal	23	347	4912	5886	2286	905	393	216	111	94	50	29	14	16	15	7	32	15 336	15 174	30 510	5.43	3.43
(%)	(0.1)	(2.3)	(32.0)	(38.4)	(14.9)	(5.9)	(2.6)	(1.4)	(0.7)	(0.6)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				
No information available	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–	–
Total	23	347	4912	5886	2286	905	393	216	111	94	50	29	14	16	15	7	32	15 336	15 174	30 510	5.43	3.43
(%)	(0.1)	(2.3)	(32.0)	(38.4)	(14.9)	(5.9)	(2.6)	(1.4)	(0.7)	(0.6)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				

Values in parentheses below each figure represent the percentage relative to the total of each row.

TABLE 59. *Estimated glomerular filtration rates (eGFR) at the introduction to dialysis and age (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

Age (years)	eGFR at the introduction to dialysis (mL/min/1.73 m^2)															Subtotal	No information available	Total	Mean	SD
	<1.0	1.0–1.9	2.0–2.9	4.0–5.9	6.0–7.9	8.0–9.9	10.0–11.9	12.0–13.9	14.0–15.9	16.0–17.9	18.0–19.9	20.0–21.9	22.0–23.9	24.0–25.9	26.0–27.9	28.0–29.9	≥30.0				
<15	0	0	0	2	1	3	1	2	1	0	0	0	0	0	0	0	10	18	28	9.68	3.14
(%)	(0.0)	(0.0)	(0.0)	(20.0)	(10.0)	(30.0)	(10.0)	(20.0)	(10.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
15–29	0	14	52	29	10	2	3	1	2	0	0	0	0	0	0	1	114	137	251	4.51	3.60
(%)	(0.0)	(12.3)	(45.6)	(25.4)	(8.8)	(1.8)	(2.6)	(0.9)	(1.8)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.9)	(100.0)				
30–4	3	56	329	257	68	32	13	4	3	4	0	4	0	0	1	0	774	832	1 606	4.54	2.72
(%)	(0.4)	(7.2)	(42.5)	(33.2)	(8.8)	(4.1)	(1.7)	(0.5)	(0.4)	(0.5)	(0.0)	(0.5)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
45–59	7	117	1170	1105	366	125	56	29	14	14	10	3	1	2	3	2	3 029	2 928	5 957	4.96	3.27
(%)	(0.2)	(3.9)	(38.6)	(36.5)	(12.1)	(4.1)	(1.8)	(1.0)	(0.5)	(0.5)	(0.3)	(0.1)	(0.0)	(0.1)	(0.1)	(0.1)	(100.0)				
60–74	5	115	2069	2508	943	315	146	85	38	32	18	13	5	8	5	3	6 323	6 144	12 467	5.37	3.54
(%)	(0.1)	(1.8)	(32.7)	(39.7)	(14.9)	(5.0)	(2.3)	(1.3)	(0.6)	(0.5)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(100.0)				
75–89	8	44	1246	1917	855	406	167	87	49	42	21	8	7	6	7	1	4 880	4 882	9762	5.91	3.37
(%)	(0.2)	(0.9)	(25.5)	(39.3)	(17.5)	(8.3)	(3.4)	(1.8)	(1.0)	(0.9)	(0.4)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(100.0)				
≥90	0	1	46	68	43	22	7	8	4	2	1	1	1	0	0	0	206	215	421	6.67	4.16
(%)	(0.0)	(0.5)	(22.3)	(33.0)	(20.9)	(10.7)	(3.4)	(3.9)	(1.9)	(1.0)	(0.5)	(0.5)	(0.5)	(0.0)	(0.0)	(0.0)	(100.0)				
Subtotal	23	347	4912	5886	2286	905	393	216	111	94	50	29	14	16	15	7	32	15 156	30 492	5.43	3.43
(%)	(0.1)	(2.3)	(32.0)	(38.4)	(14.9)	(5.9)	(2.6)	(1.4)	(0.7)	(0.6)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)			
No information available	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	18		
Total	23	347	4912	5886	2286	905	393	216	111	94	50	29	14	16	15	7	32	15 174	30 510	5.43	3.43
(%)	(0.1)	(2.3)	(32.0)	(38.4)	(14.9)	(5.9)	(2.6)	(1.4)	(0.7)	(0.6)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)			
Mean	63.17	57.26	65.06	67.96	69.80	70.82	70.59	70.68	70.27	70.91	71.50	65.59	75.64	71.81	69.80	62.57	68.91	67.39	67.28	67.33	
SD	14.73	15.35	13.26	12.41	12.30	12.92	12.95	12.79	15.11	12.51	11.70	16.50	10.53	11.07	12.43	13.65	14.59	13.07	13.37	13.22	

Values in parentheses below each figure represent % relative to the total of each row.

TABLE 60. *Estimated glomerular filtration rates (eGFR) at the introduction to dialysis and primary diseases (only patients begun on dialysis in 2007 who responded to the questionnaire using floppy disks)*

	eGFR at introduction into dialysis (mL/min/1.73 m^2)																					
Primary disease	<1.0	1.0–1.9	2.0–2.9	4.0–5.9	6.0–7.9	8.0–9.9	10.0–11.9	12.0–13.9	14.0–15.9	16.0–17.9	18.0–19.9	20.0–21.9	22.0–23.9	24.0–25.9	26.0–27.9	28.0–29.9	≥30.0	Subtotal	No information available	Total	Mean	SD
Chronic glomerulonephritis	8	128	1338	1273	416	147	60	29	17	19	6	2	3	3	3	1	8	3461	3 539	7 000	4.94	3.30
(%)	(0.2)	(3.7)	(38.7)	(36.8)	(12.0)	(4.2)	(1.7)	(0.8)	(0.5)	(0.5)	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				
Chronic pyelonephritis	1	4	46	37	13	6	0	0	1	1	0	0	0	0	0	0	0	109	105	214	4.63	2.31
(%)	(0.9)	(3.7)	(42.2)	(33.9)	(11.9)	(5.5)	(0.0)	(0.0)	(0.9)	(0.9)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Rapidly progressive glomerulonephritis	0	11	94	83	37	15	6	1	2	2	1	0	0	1	0	0	0	253	258	511	5.08	2.99
(%)	(0.0)	(4.3)	(37.2)	(32.8)	(14.6)	(5.9)	(2.4)	(0.4)	(0.8)	(0.8)	(0.4)	(0.0)	(0.0)	(0.4)	(0.0)	(0.0)	(0.0)	(100.0)				
Nephropathy of pregnancy / pregnancy toxemia	1	0	12	7	3	0	0	0	0	0	0	0	0	0	0	0	0	23	16	39	3.96	1.70
(%)	(4.3)	(0.0)	(52.2)	(30.4)	(13.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Other nephritides that cannot be classified	0	3	30	24	7	3	3	0	0	1	0	0	0	0	0	0	0	71	60	131	4.84	2.65
(%)	(0.0)	(4.2)	(42.3)	(33.8)	(9.9)	(4.2)	(4.2)	(0.0)	(0.0)	(1.4)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Polycystic kidney disease	2	15	163	155	43	6	2	0	1	0	1	0	0	0	0	0	0	388	306	694	4.41	1.79
(%)	(0.5)	(3.9)	(42.0)	(39.9)	(11.1)	(1.5)	(0.5)	(0.0)	(0.3)	(0.0)	(0.3)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Nephrosclerosis	0	25	610	709	268	110	44	29	10	8	4	2	2	1	2	0	1	1 825	1 555	3 380	5.31	2.90
(%)	(0.0)	(1.4)	(33.4)	(38.8)	(14.7)	(6.0)	(2.4)	(1.6)	(0.5)	(0.4)	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	(0.0)	(0.1)	(100.0)				
Malignant hypertension	0	5	30	36	13	1	1	0	0	0	0	0	0	0	0	0	0	86	102	188	4.36	1.74
(%)	(0.0)	(5.8)	(34.9)	(41.9)	(15.1)	(1.2)	(1.2)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Diabetic nephropathy	10	82	1852	2785	1170	468	199	120	49	41	28	17	8	8	8	2	13	6 860	6 511	13 371	5.73	3.44
(%)	(0.1)	(1.2)	(27.0)	(40.6)	(17.1)	(6.8)	(2.9)	(1.7)	(0.7)	(0.6)	(0.4)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				
Systemic lupus erythematosus nephritis	1	0	36	41	19	14	3	1	2	1	1	1	0	0	0	0	1	121	104	225	6.15	3.98
(%)	(0.8)	(0.0)	(29.8)	(33.9)	(15.7)	(11.6)	(2.5)	(0.8)	(1.7)	(0.8)	(0.8)	(0.8)	(0.0)	(0.0)	(0.0)	(0.0)	(0.8)	(100.0)				
Amyloidal kidney	0	0	22	19	15	8	2	1	0	1	1	1	0	0	0	1	0	71	86	157	6.48	4.50
(%)	(0.0)	(0.0)	(31.0)	(26.8)	(21.1)	(11.3)	(2.8)	(1.4)	(0.0)	(1.4)	(1.4)	(1.4)	(0.0)	(0.0)	(0.0)	(1.4)	(0.0)	(100.0)				
Gouty kidney	0	0	16	24	8	1	2	2	0	1	0	0	0	0	0	0	0	54	31	85	5.40	3.07
(%)	(0.0)	(0.0)	(29.6)	(44.4)	(14.8)	(1.9)	(3.7)	(3.7)	(0.0)	(1.9)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Renal failure due to congenital abnormal metabolism	0	1	4	9	2	0	0	0	0	0	0	0	0	0	0	0	0	16	19	35	4.30	1.37
(%)	(0.0)	(6.3)	(25.0)	(56.3)	(12.5)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Kidney and urinary tract tuberculosis	0	0	3	6	1	0	1	0	1	0	0	0	0	0	0	0	0	12	4	16	5.97	3.70
(%)	(0.0)	(0.0)	(25.0)	(50.0)	(8.3)	(0.0)	(8.3)	(0.0)	(8.3)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Kidney and urinary tract stone	0	4	11	10	3	0	1	0	0	1	0	0	0	0	0	0	0	30	24	54	4.63	2.99
(%)	(0.0)	(13.3)	(36.7)	(33.3)	(10.0)	(0.0)	(3.3)	(0.0)	(0.0)	(3.3)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Kidney and urinary tract tumor	0	1	22	20	10	0	4	2	1	2	0	0	0	0	0	0	3	65	79	144	7.35	8.65
(%)	(0.0)	(1.5)	(33.8)	(30.8)	(15.4)	(0.0)	(6.2)	(3.1)	(1.5)	(3.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(4.6)	(100.0)				
Obstructive urinary tract difficulty	0	3	21	19	5	0	0	0	0	0	0	0	0	0	0	0	0	48	49	97	4.07	1.39
(%)	(0.0)	(6.3)	(43.8)	(39.6)	(10.4)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Myeloma	0	4	24	26	3	2	1	0	0	0	0	0	0	0	0	0	0	60	79	139	4.25	1.78
(%)	(0.0)	(6.7)	(40.0)	(43.3)	(5.0)	(3.3)	(1.7)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Hypoplastic kidney	0	4	10	6	1	2	1	1	0	0	1	0	0	0	0	0	0	26	21	47	5.24	4.00
(%)	(0.0)	(15.4)	(38.5)	(23.1)	(3.8)	(7.7)	(3.8)	(3.8)	(0.0)	(0.0)	(3.8)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Unspecified	0	51	453	464	183	86	46	21	16	12	5	4	1	1	0	1	1	1 345	1 680	3 025	5.45	3.60
(%)	(0.0)	(3.8)	(33.7)	(34.5)	(13.6)	(6.4)	(3.4)	(1.6)	(1.2)	(0.9)	(0.4)	(0.3)	(0.1)	(0.1)	(0.0)	(0.1)	(0.1)	(100.0)				
Reintroduction after transplantation	0	0	10	20	6	6	2	0	0	0	0	0	0	0	0	0	0	44	47	91	5.45	2.23
(%)	(0.0)	(0.0)	(22.7)	(45.5)	(13.6)	(13.6)	(4.5)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)				
Others	0	6	103	111	60	29	15	9	11	4	2	2	0	2	2	2	5	363	403	766	6.85	5.45
(%)	(0.0)	(1.7)	(28.4)	(30.6)	(16.5)	(8.0)	(4.1)	(2.5)	(3.0)	(1.1)	(0.6)	(0.6)	(0.0)	(0.6)	(0.6)	(0.6)	(1.4)	(100.0)				
Subtotal	23	347	4910	5884	2286	904	393	216	111	94	50	29	14	16	15	7	32	15 331	15 078	30 409	5.43	3.43
(%)	(0.2)	(2.3)	(32.0)	(38.4)	(14.9)	(5.9)	(2.6)	(1.4)	(0.7)	(0.6)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				
No information available	0	0	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0	5	96	101	5.31	2.45
Total	23	347	4912	5886	2286	905	393	216	111	94	50	29	14	16	15	7	32	15 336	15 174	30 510	5.43	3.43
(%)	(0.1)	(2.3)	(32.0)	(38.4)	(14.9)	(5.9)	(2.6)	(1.4)	(0.7)	(0.6)	(0.3)	(0.2)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	(100.0)				

Values in parentheses below each figure represent the percentage relative to the total of each row.

eGFR of male patients = 186 × (serum creatinine concentration prior to first dialysis$^{(-1.154)}$) × (age at introduction into dialysis$^{(-0.203)}$) × 0.881

When the serum creatinine concentration was determined by the enzyme method, the following equation was used:

eGFR of male patients = 175 × (serum creatinine concentration prior to first dialysis$^{(-1.154)}$) × (age at introduction to dialysis$^{(-0.203)}$) × 0.741

The eGFR of female patients was calculated by multiplying the value obtained using the above equations, that is, the eGFR of male patients, by 0.742.

a. Treatment method at the end of year of introduction into dialysis. Table 57 shows the relationship between eGFR at the introduction to dialysis and the treatment method at the end of the year of introduction (2007). The mean eGFR at the introduction to dialysis of patients who underwent home hemodialysis was as low as 3.25 (±0.25) mL/min, which was difficult to evaluate accurately because the number of patients evaluated was only two. No significant difference in eGFR was found among the patients who were treated by other methods.

b. Gender. Table 58 shows the relationship between eGFR at the introduction to dialysis and gender. Similarly to the result of the 2006 survey, the eGFR of female patients was lower than that of male patients, despite the fact that the serum creatinine concentration at the introduction to dialysis of the female patients was lower than that of the male patients.

c. Age. Table 59 shows the relationship between eGFR at the introduction to dialysis and age. The eGFR of the patients tended to increase with age, which was similar to that in the 2006 survey.

d. Primary disease. Table 60 shows the relationship between eGFR at the introduction to dialysis and primary disease. The eGFR tended to be high for patients with renal or urinary tract tumors, amyloid nephropathy, SLE nephritis, and diabetic nephropathy as the primary diseases.

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