등록사업보고

우리나라 신대체 요법의 현황
-인산 민병석 교수 기념 말기 신부전 환자 등록사업 2007-

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Current Renal Replacement Therapy in Korea
- Insan Memorial Dialysis Registry 2007 -

ESRD Registry Committee, Korean Society of Nephrology*

ABSTRACTS

Registry committee of Korean Society of Nephrology has collected data about dialysis in Korea through on-line registry program in KSN internet web site. The status of renal replacement therapy in Korea at the end of 2007 was as follows:

1) The total number of patients with renal replacement therapy (RRT) was 48,675 (hemodialysis : HD 30,907, peritoneal dialysis : PD 7,649, functioning kidney transplant: KT 10,119). Prevalence of RRT was 972.8 patients per million population (ppm). The proportion of RRT was HD 63.5%, PD 15.7%, and renal transplant 20.8%.

2) New RRT patients in 2007 were 9,183 (HD 6,193, PD 2,062, KT 928). Incidence rate was 183.5 ppm in 2007.

3) The most common primary cause of end stage renal diseases was diabetic nephropathy (44.9%), hypertensive nephrosclerosis (17.2%) and chronic glomerulonephritis (11.6%), in order.

4) The number of RRT centers was 535 and total number of HD machines was 11,387. Dialysis patients' individual data were collected from 59.3% of overall RRT centers.

5) Mean age of HD patient was 56.7 years old, of PD was 54.9 years old. Proportion of patients on HD more than 5 years' maintenance was 44%.

6) Mean BMI (body mass index; Kg/m^2) of HD patients was 21.6 kg/m^2 and BMI of PD patients was 23.3 kg/m^2. Mean blood pressure was 103.6 mmHg in HD and 100.6 mmHg in PD patients. Pulse pressure was 62.6 mmHg in HD and 54.4 mmHg in PD patients.

7) Mean hemoglobin of HD patient was 10.23 g/dL (31.0%), PD was 9.82 g/dL (29.3%).

8) Mean urea reduction ratio was 66.9% in male HD patients and 73.4% in female HD patients. Mean Kt/V was 1.361 in male patient, 1.639 in female patients.

9) The common co-morbid disease of HD patients was hypertension (40.8%), coronary artery disease (6.4%), congestive heart failure (5.2%), and those of PD patients were also hypertension (51.6%), coronary artery disease (7.7%), congestive heart failure (4.8%).

10) Overall patient survival of male dialysis patient in 5 years was 57.6%, female patients was 61.4%. HD patient's 5 year survival was 63.7% and PD was 43.1%. Diabetic dialysis patient's 5 year survival was 47.2%.

11) Common causes of death were unknown cause or not uremia associated cardiac arrest (13.3%), cerebrovascular accident (13.0%), sepsis (11.7%), uremia associated cardiac arrest (10.8%) and myocardial infarction (7.5%) in 2007.

12) The number of kidney transplantation was 928 (cadaver donor 280) in 2007.

13) Analysis on elderly dialysis patients (65 and over 65 year-old : 31% of overall dialysis patients) revealed no significant difference compare to young dialysis patients in BMI, blood pressure, pulse pressure, hemoglobin, dialysis adequacy. But cardiac disease prevalence was higher in elderly dialysis patients.

Key words : renal replacement therapy, hemodialysis, peritoneal dialysis, kidney transplantation, prevalence, incidence, survival, dialysis adequacy

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Part 1. Prevalence & Incidence of ESRD (1)

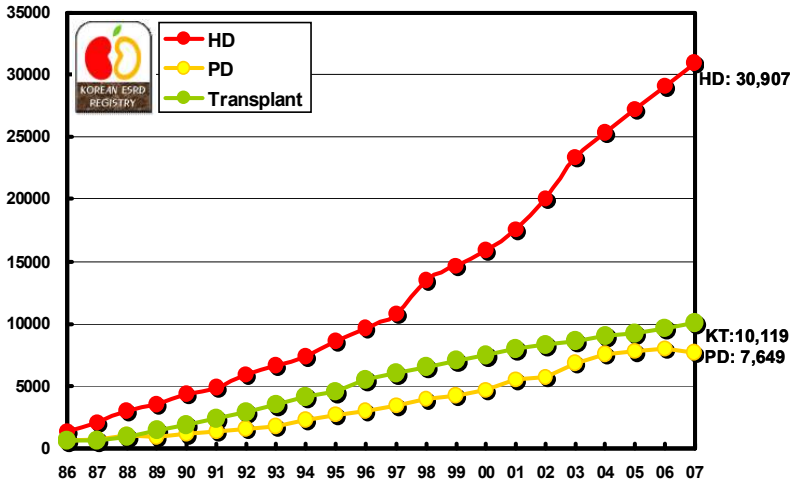

Fig. 1-1. Patient numbers of renal replacement therapy at the end of each year.

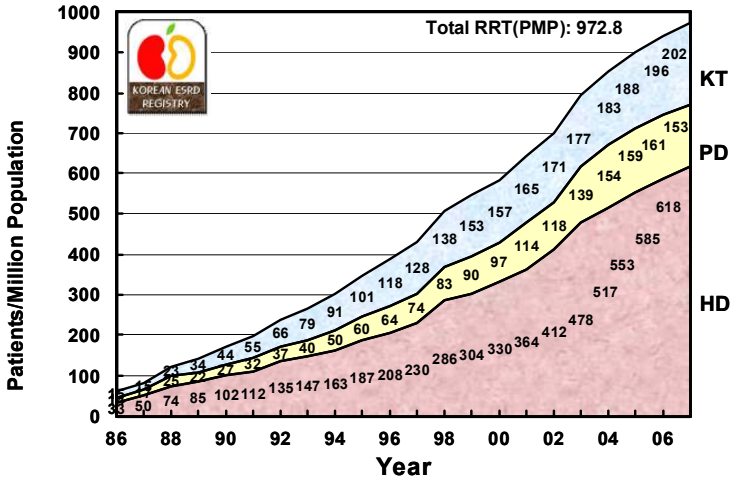

Fig. 1-2. Point prevalence of renal replacement therapy (Patients numbers per million population, HD: hemodialysis, PD: peritoneal dialysis, KT: kidney transplantation).

Table 1-1. Prevalence of renal replacement therapy.

	HD	PD	Transplant	Total
1986	1,335 (32.6)	573 (13.9)	621 (15.1)	2,534 (61.7)
1988	3,012 (74.0)	1,058 (25.2)	982 (23.4)	5,142 (122.7)
1990	4,311 (101.8)	1,130 (26.7)	1,866 (44.1)	7,307 (172.6)
1992	5,890 (135.3)	1,599 (36.7)	2,862 (65.8)	10,351 (237.8)
1994	7,387 (162.7)	2,284 (50.3)	4,116 (90.6)	13,787 (303.6)
1996	9,635 (207.5)	2,976 (64.1)	5,461 (117.6)	18,072 (389.2)
1998	13,473 (285.6)	3,912 (82.9)	6,515 (138.1)	23,900 (506.7)
2000	15,853 (330.4)	4,671 (97.4)	7,522 (156.8)	28,046 (584.5)
2001	17,568 (363.8)	5,489 (113.7)	7,957 (164.8)	31,014 (642.3)
2002	20,010 (412.4)	5,712 (117.7)	8,271 (170.5)	33,993 (700.6)
2003	23,348 (478.2)	6,807 (139.4)	8,635 (176.9)	38,790 (794.5)
2004	25,335 (516.5)	7,569 (154.3)	8,987 (183.2)	41,891 (854.0)
2005	27,246 (553.0)	7,816 (158.6)	9,271 (188.2)	44,333 (899.8)
2006	29,031 (585.0)	7,990 (161.0)	9,709 (195.7)	46,730 (941.7)
2007	30,907 (617.7)	7,649 (152.9)	10,119 (202.2)	48,675 (972.8)

( ): number of patients per million population

Part 1. Prevalence & Incidence of ESRD (2)

Table 1-2. Number of new renal replacement therapy patients.

	HD	PD	Transplant	Total
1986	670 (16.3)	287 (7.0)	221 (5.4)	1,173 (28.7)
1988	1,516 (36.2)	375 (8.9)	428 (10.2)	2,319 (55.3)
1990	2,418 (57.1)	530 (12.5)	624 (14.7)	3,572 (84.3)
1992	3,083 (70.8)	705 (16.2)	765 (17.6)	4,553 (104.6)
1994	2,999 (66.0)	907 (19.9)	685 (15.1)	4,591 (101.1)
1996	3,670 (79.0)	1,388 (29.9)	919 (19.8)	5,977 (128.7)
1998	2,463 (52.2)	753 (15.9)	994 (21.1)	4,210 (89.3)
2000	2,736 (57.0)	1,021 (21.3)	683 (14.2)	4,440 (92.5)
2001	3,373 (69.9)	1,279 (26.5)	848 (17.6)	5,500 (113.9)
2002	3,878 (79.9)	1,666 (34.3)	739 (15.2)	6,283 (129.5)
2003	4,769 (97.7)	1,866 (38.2)	806 (16.5)	7,441 (152.4)
2004	5,279 (107.6)	2,246 (45.8)	853 (17.4)	8,378 (170.8)
2005	5,400 (109.6)	2,381 (48.3)	762 (15.5)	8,543 (173.4)
2006	5,694 (114.7)	2,568 (51.7)	935 (18.8)	9,197 (185.3)
2007	6,193 (123.8)	2,062 (41.2)	928 (18.5)	9,183 (183.5)

( ): number of patients per million population

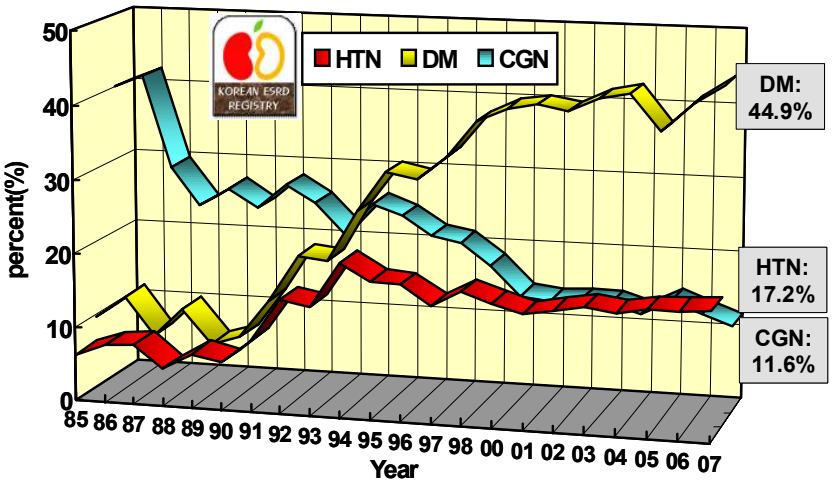

Fig.1- 3. Three major causes of end stage renal disease patients who were initiated renal replacement therapy in each year. (DM: diabetic nephropathy, CGN: chronic glomerulonephritis, HTN: hypertensive nephrosclerosis). Note increase of DM and decrease of CGN.

Table 1-3. Causes of end stage renal disease in new patients.

Causes	Percent (%)									
	1992	1994	1996	1998	2000	2002	2004	2005	2006	2007*
Chronic Glomerulonephritis	25.3	25.5	21.6	17.9	14.0	13.9	12.5	14.5	13.0	11.6
Not Histologically confirmed	19.7	20.4	16.7	13.6	10.6	10.0	8.6	10.1	9.0	8.3
Histologically confirmed	5.6	5.0	4.9	4.3	3.4	3.9	3.9	4.4	3.9	3.3
Diabetic nephropathy	19.5	26.1	30.8	38.9	40.7	40.7	43.4	38.5	42.3	44.9
Hypertensive nephrosclerosis	15.4	20.8	18.3	17.8	16.6	16.0	16.2	16.9	16.9	17.2
Cystic kidney disease	2.1	2.2	1.8	1.7	2.2	1.6	1.4	1.9	1.7	1.7
Renal tuberculosis	1.1	1.5	1.2	0.5	0.4	0.5	0.3	0.3	0.3	0.3
Pyelo/interstitial nephritis	1.3	1.1	0.7	1.0	0.8	0.6	0.6	0.5	0.6	0.5
Drugs or nephrotoxic agents	1.3	0.1	0.6	0.3	0.3	0.4	0.2	0.2	0.3	0.2
Lupus nephritis	0.8	0.7	1.0	0.5	0.9	0.8	0.6	0.7	0.6	0.6
Gouty nephropathy	0.7	0.7	0.6	0.5	0.7	0.4	0.5	0.5	0.3	0.3
Hereditary nephropathy	0.3	0.7	0.4	0.2	0.1	0.2	0.3	0.4	0.3	0.2
Kidney tumor	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.1
Other	4.1	2.7	2.8	3.9	3.0	5.6	5.9	7.5	6.0	5.1
Uncertain	28.6	17.8	15.9	16.6	20.2	19.0	17.8	17.8	17.5	17.2

* n = 7,106

Part 2. Renal Replacement Therapy Modalities

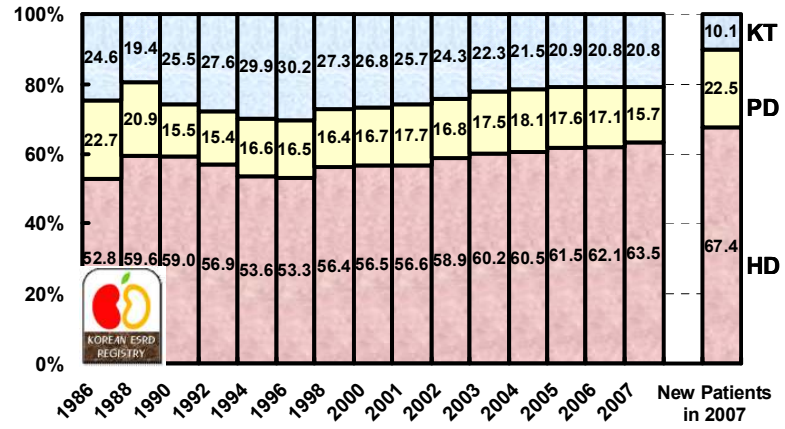

Fig. 2-1. Proportion of renal replacement modalities, annual prevalence and incidence in 2007. HD: hemodialysis, PD: peritoneal dialysis, KT: kidney transplantation.

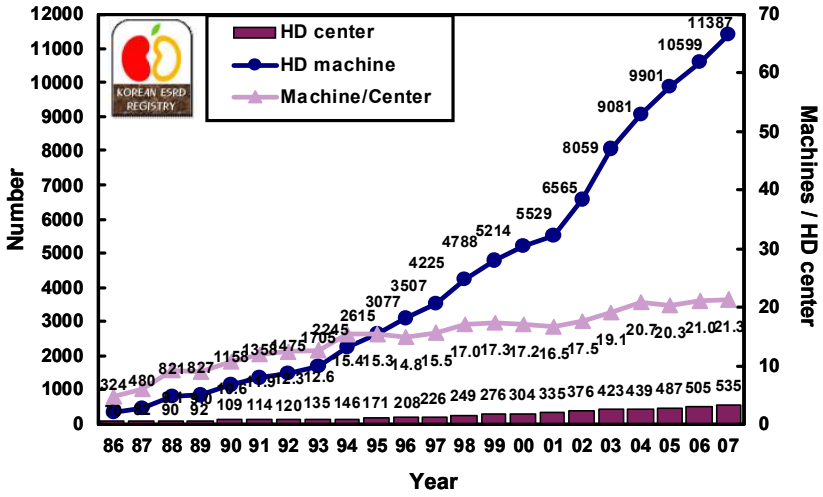

Fig. 2-2. Numbers of dialysis centers, hemodialysis machines and machine per each dialysis center in Korea.

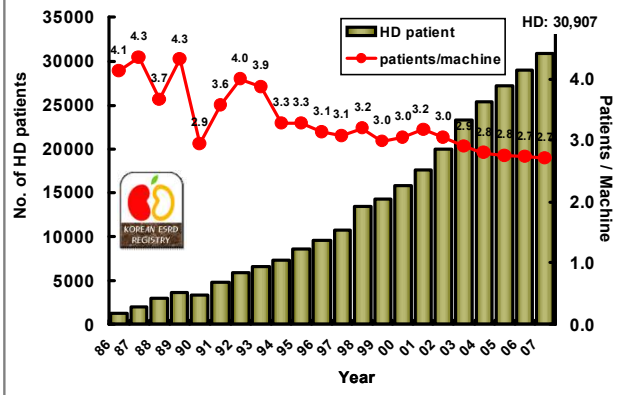

Fig. 2-3. Number of hemodialysis patients and hemodialysis patients per hemodialysis machine.

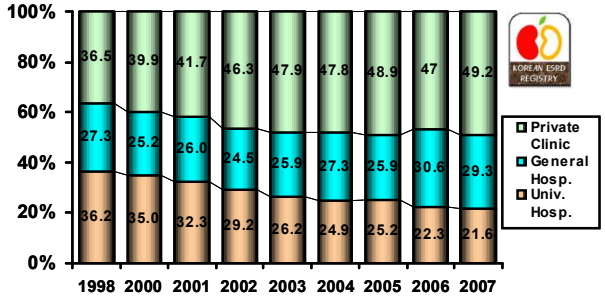

Fig.2-4. Percentage of hemodialysis patients number according to dialysis center.

Part 3. Regional Distribution of Patients & Facilities

Table 3-1. Administrative regional distribution of dialysis patients and machines (at Dec 2007).

	HD pts	PD pts	Total Dialysis pts	Dialysis pts. / Million pop.	Dialysis Centers	HD machines	HD pts./ HD machine
서울 Seoul	7,875	2,525	10,400	998	121	2,690	2.9
부산 Busan	2,496	863	3,359	929	37	928	2.7
대구 Daegu	1,708	852	2,560	1,019	28	578	3.0
인천 Incheon	1,504	423	1,927	711	20	497	3.0
광주 Gwangju	1,151	203	1,354	951	26	519	2.2
대전 Daejeon	914	268	1,182	794	18	443	2.1
울산 Ulsan	520	65	585	526	10	214	2.4
경기 Gyeonggi	5,964	1,163	7,127	628	105	2,339	2.5
강원 Gangwon	976	368	1,344	887	20	384	2.5
충북 Chungbuk	961	90	1,051	688	20	360	2.7
충남 Chungnam	1,176	70	1,246	615	22	387	3.0
전북 Jeonbuk	1,201	125	1,326	706	14	337	3.6
전남 Jeonnam	1,026	89	1,115	573	22	408	2.5
경북 Gyeongbuk	1,213	220	1,433	528	27	452	2.7
경남 Gyeongnam	1,745	270	2,015	622	36	681	2.6
제주 Jeju	477	55	532	944	9	170	2.8
Total	30,907	7,649	38,556	771	535	11,387	2.7

Table 3-2. Distribution of dialysis patients and machines according to life zone.

	Population (%)	HD patients	PD patients	Total Dialysis patients	Dialysis pts / Million pop.	Dialysis centers	Dialysis machine	HD pts / HD machine
수도권 (Capital area)	24,472,063	15,343	4,111	19,454	795	246	5,526	2.8
(Seoul, Incheon, Gyeonggi)	48.9%	49.6%	53.7%	50.5%		46.0%	48.5%	
충청권 (Chungchung)	5,041,259	3,051	428	3,479	690	60	1,190	2.6
(Daejeon, Chungnam, Chungbuk)	10.1%	9.9%	5.6%	9.0%		11.2%	10.5%	
호남권 (Honam)	5,246,850	3,378	417	3,795	723	62	1,264	2.7
(Gwangju, Jeonnam, Jeonbuk)	10.5%	10.9%	5.5%	9.8%		11.6%	11.1%	
영남권 (Youngnam)	13,194,997	7,682	2,270	9,952	754	138	2,853	2.7
(Busan, Daegu, Gyeongnam, Gyeongbuk, Ulsan)	26.4%	24.9%	29.7%	25.8%		25.8%	25.1%	
강원권 (Gangwon)	1,515,800	976	368	1,344	887	20	384	2.5
	3.0%	3.2%	4.8%	3.5%		3.7%	3.4%	
Total	50,034,357	30,907	7,649	38,556	771	535	11,387	2.7

* 제주 표시 제외. Data of Jeju-do is not shown.

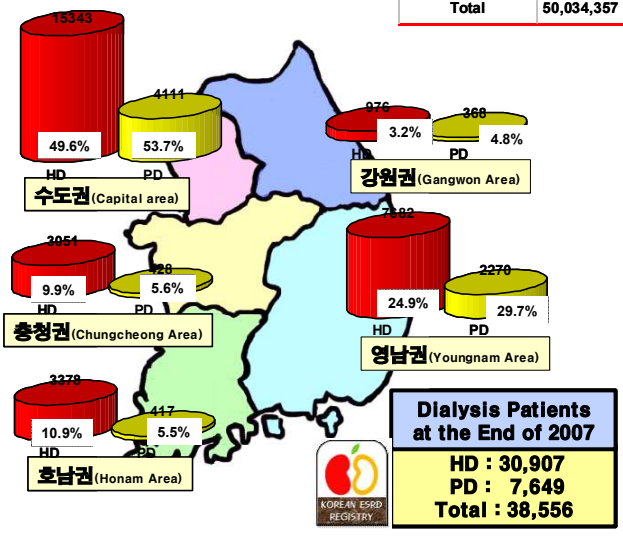

Fig. 3-1. Distribution of dialysis patients and machines according to life zone.

Part 4. Dialysis Patients Demographics (1)

Table 4-1. Percent of dialysis centers contributing individual patient data.

	Dialysis centers	Internet Input	Paper data	Total contributed center	Contributing rate (%)
서울 Seoul	121	54	14	68	56.2
부산 Busan	37	19	4	23	62.2
대구 Daegu	28	16	4	20	71.4
인천 Incheon	20	9	0	9	45.0
광주 Gwangju	26	11	5	16	61.5
대전 Daejeon	18	8	1	9	50.0
울산 Ulsan	10	3	2	5	50.0
경기 Gyeonggi	105	32	25	57	54.3
강원 Gangwon	20	10	3	13	65.0
충북 Chungbuk	20	6	6	12	60.0
충남 Chungnam	22	8	5	13	59.1
전북 Jeonbuk	14	8	1	9	64.3
전남 Jeonnam	22	8	3	11	50.0
경북 Gyeongbuk	27	15	9	24	88.9
경남 Gyeongnam	36	15	7	22	61.1
제주 Jeju	9	6	0	6	66.7
Total	535	228	89	317	59.3

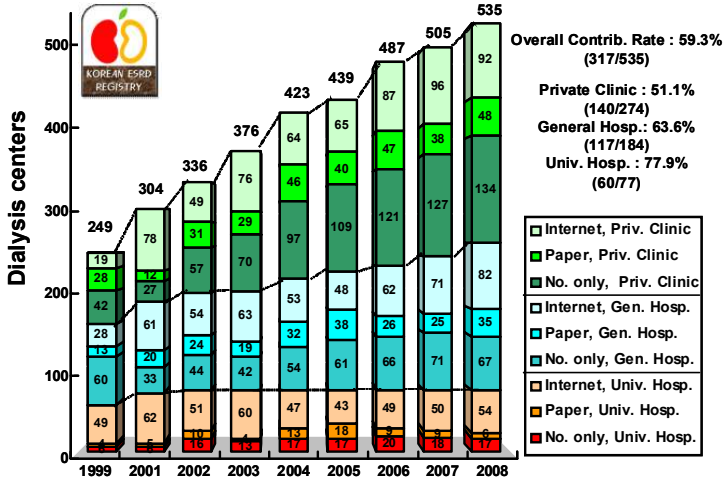

Fig. 4-1. Individual patients data contributing rate of dialysis centers according to hospital classification.

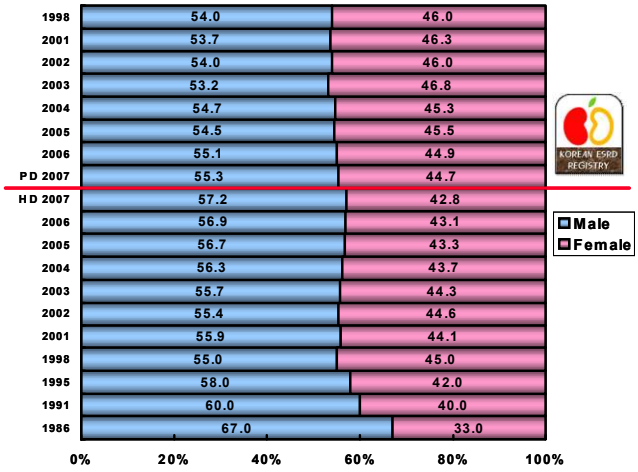

Fig.4-2. Gender ratio of HD & PD patients according to years.

Part 4. Dialysis Patients Demographics (2) - Age

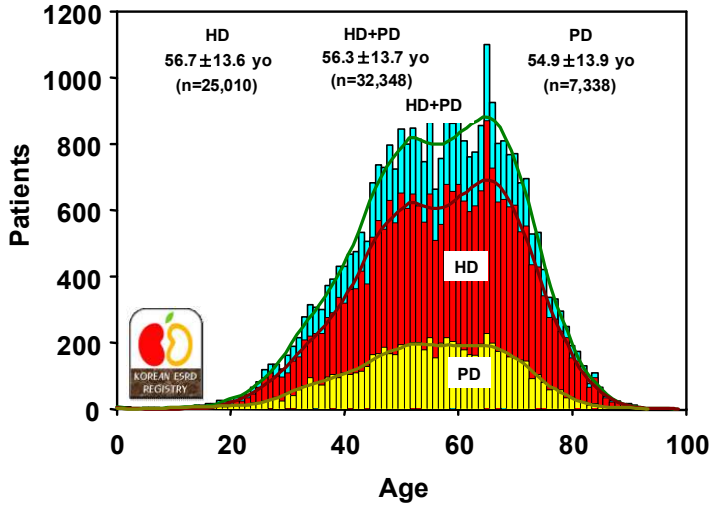

Fig. 4-3. Age distribution of dialysis patients according to dialysis modalities.

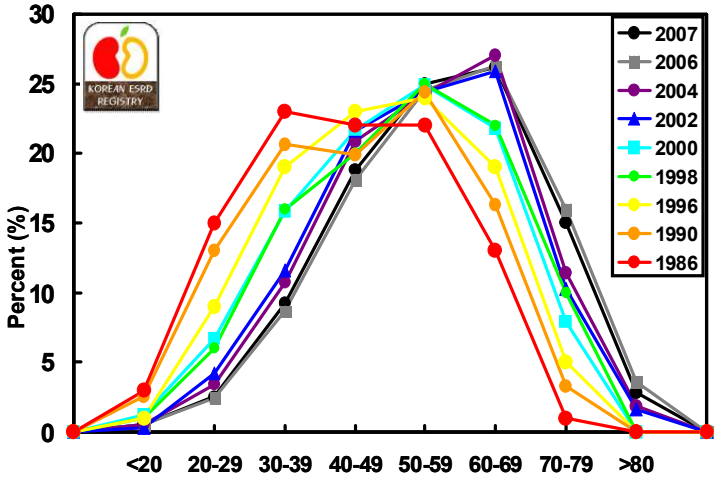

Fig.4-4. Age distribution of dialysis patients according to years. Note the peak age was shift to old age.

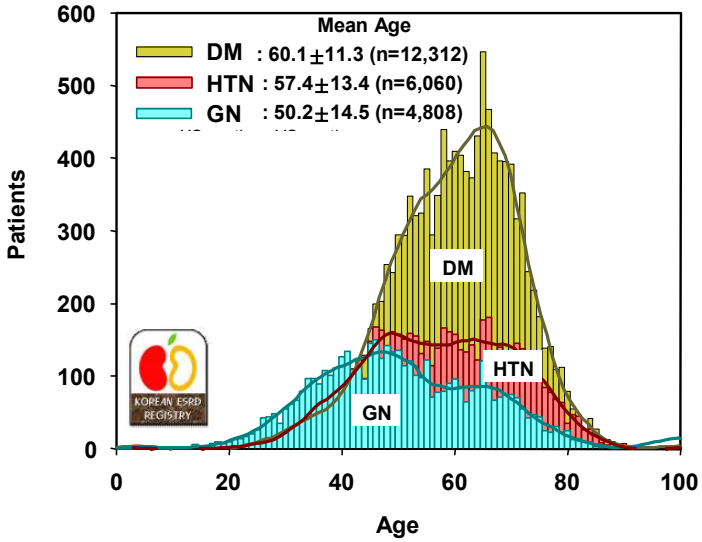

Fig. 4-5. Age distribution of dialysis patients according to underlying diseases, diabetic patients (DM), hypertensive nephrosclerosis (HTN) and glomerulonephritis (GN). Note difference of peak age between GN and DM.

Part 4. Dialysis Patients Demographics (3) – Dialysis Duration

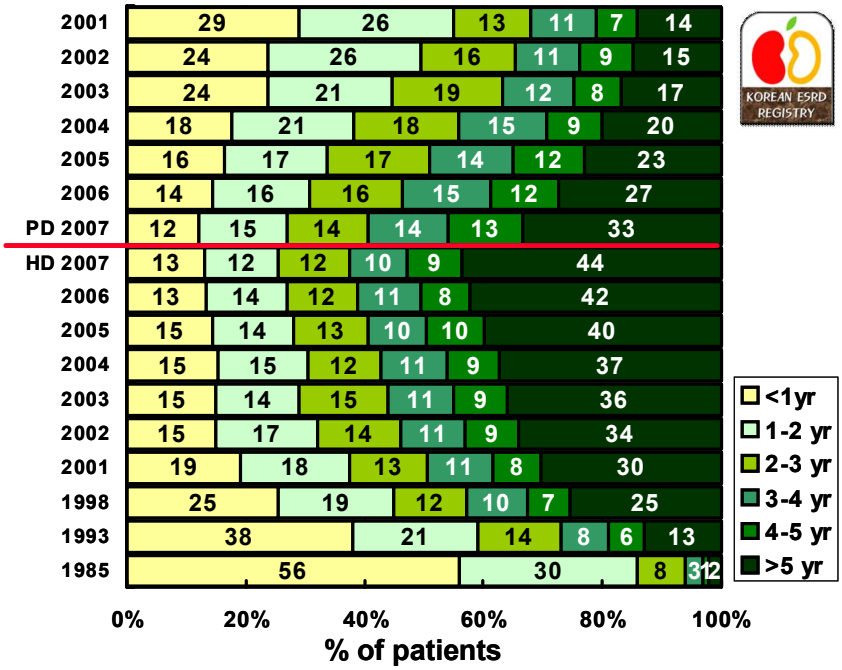

Fig. 4-6. Duration of maintenance hemodialysis and peritoneal dialysis. Percent of estimated patient number according to year.

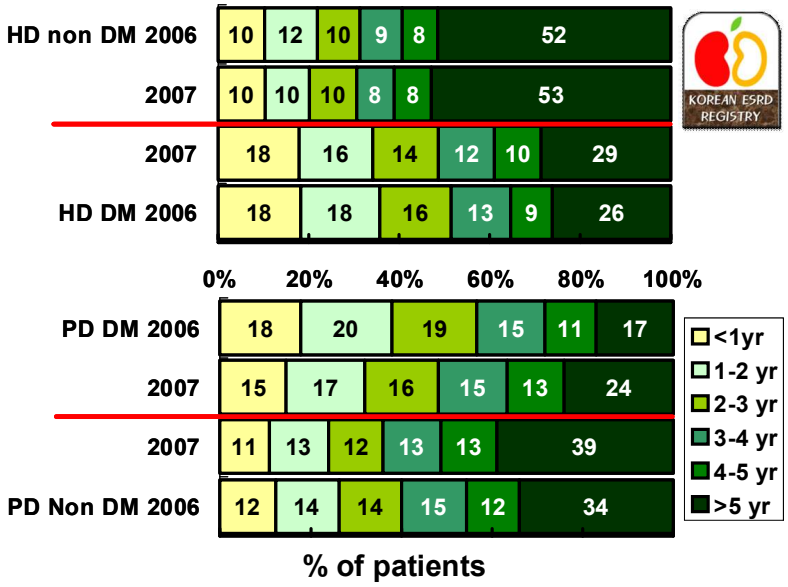

Fig 4-7. Diabetic and non-diabetic patient's duration of dialysis maintenance in 2006 & 2007.

Part 4. Dialysis Patients Demographics (4) – BMI & BP

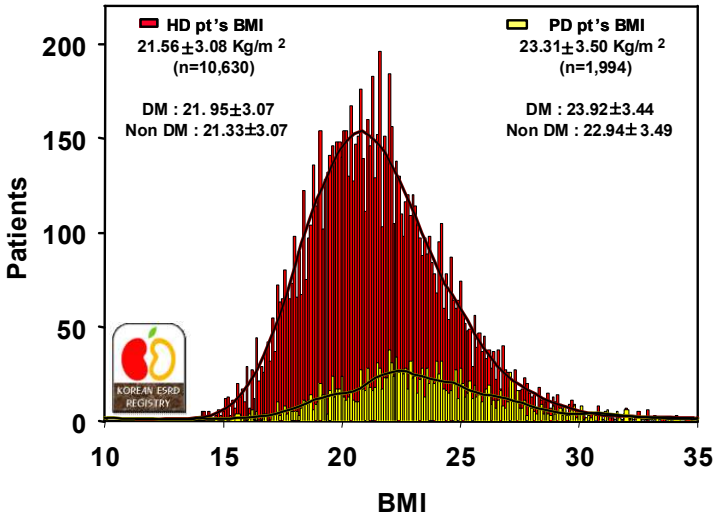

Fig. 4-8. Distribution of body mass index (BMI) in hemodialysis (HD) and peritoneal dialysis (PD) patients.

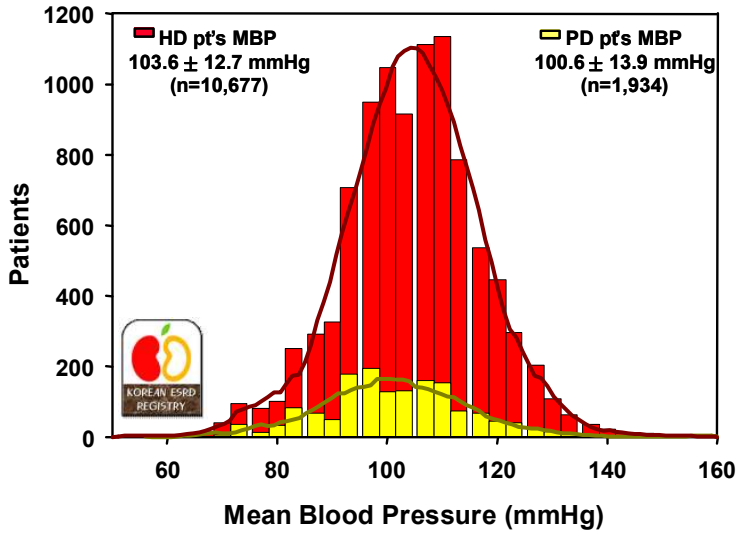

Fig. 4-9. Distribution of mean blood pressure (MBP) in hemodialysis and peritoneal dialysis patients. Blood pressure of HD patients was higher than PD patients BP.

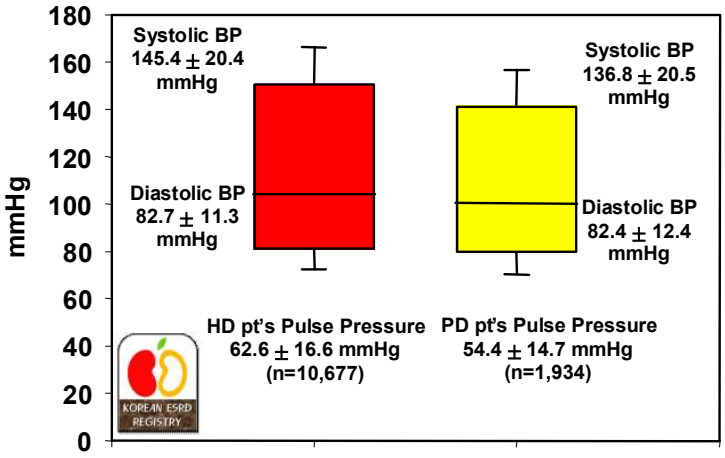

Fig.4-10. Systolic and diastolic blood pressure with pulse pressure in hemodialysis and peritoneal dialysis patients. Note difference of pulse pressure between HD and PD patients.

Part 5. Dialysis Therapy (1) - Erythropoietin

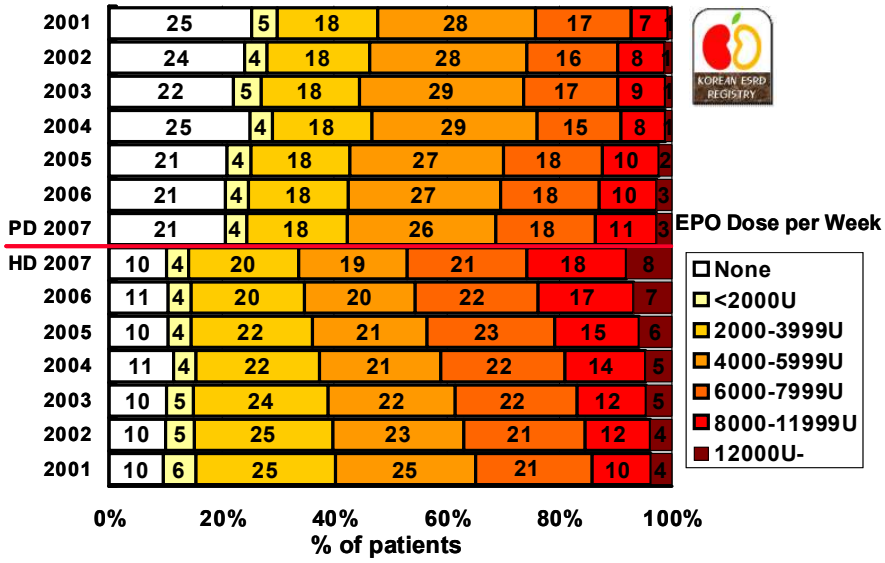

Fig.5-1. Percent distribution of prescribed erythropoietin doses for hemodialysis and peritoneal dialysis patients.

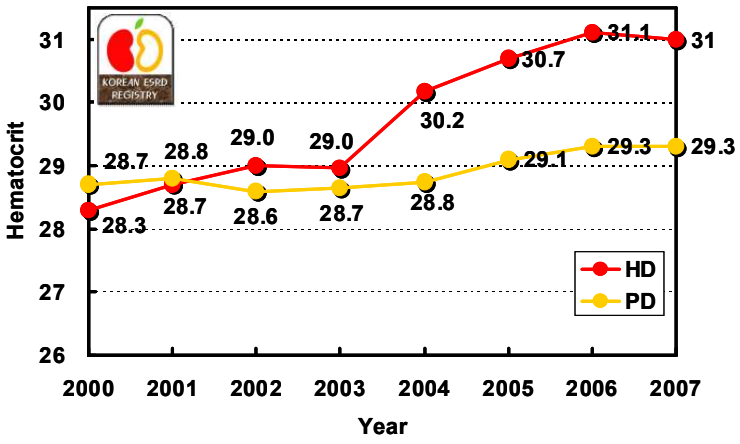

Fig. 5-2. Changes of hematocrit (%) in dialysis patients, HD versus PD. Note the increase of hematocrit of HD patients.

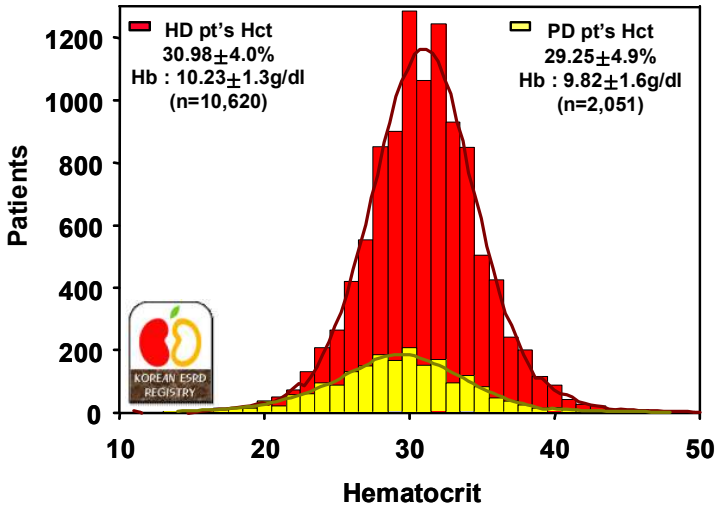

Fig.5-3. Distribution of hematocrit levels in hemodialysis and peritoneal dialysis patients. Alson mean hemoglobin level of HD and PD patients were shown.

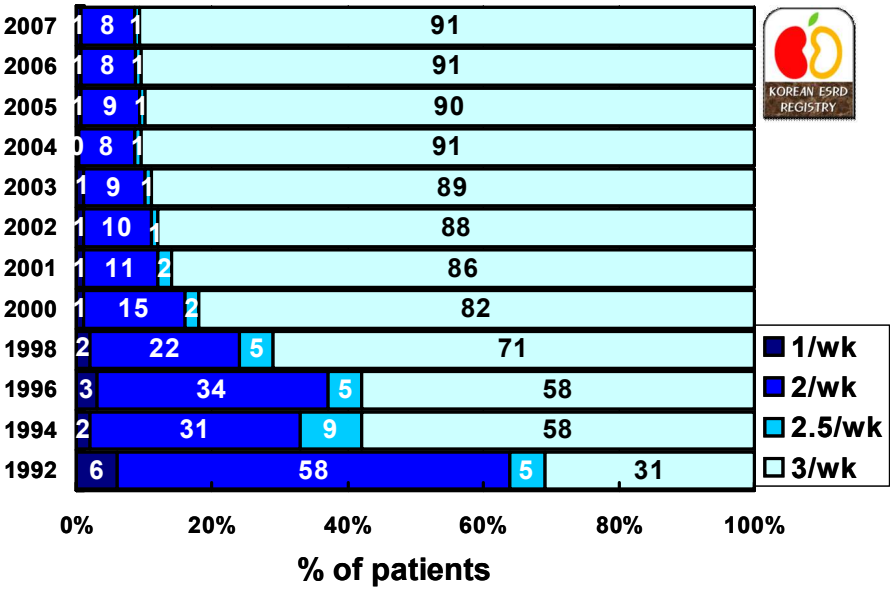

Fig.5-4. Frequency of hemodialysis per week.

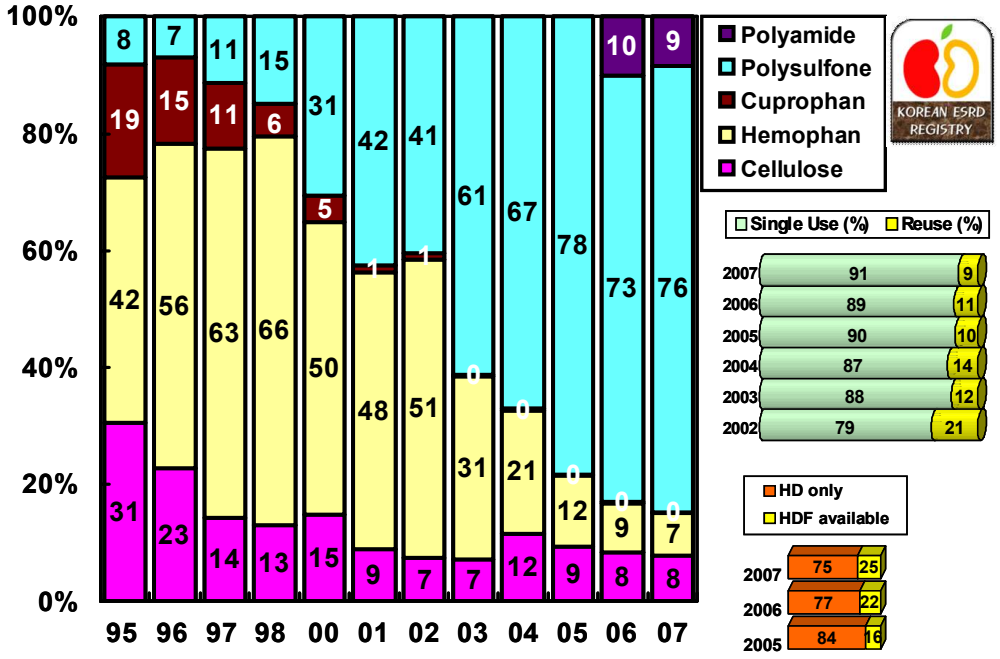

Fig.5-5. Currently using hemodialysis membranes, reuse of dialysis membrane and hemodiafiltration performing center percent among private clinics.

Part 5. Dialysis Therapy (3) – HD Adequacy

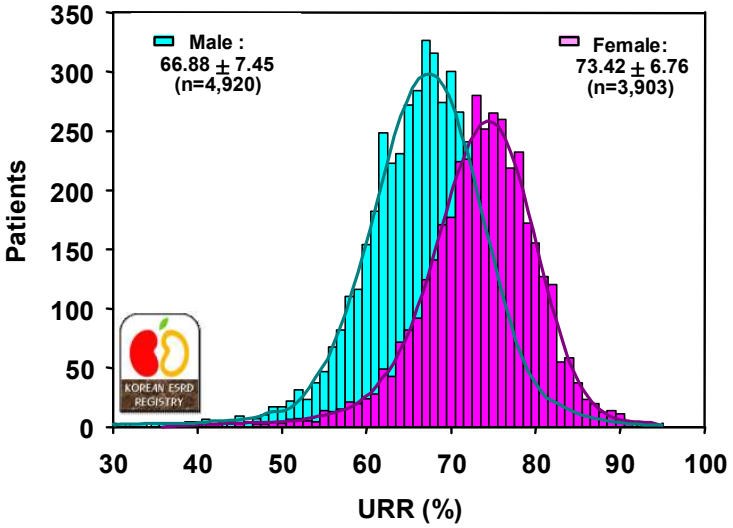

Fig.5-6. Distribution of urea reduction ratio (URR) of hemodialysis patients. Note the difference between male and female.

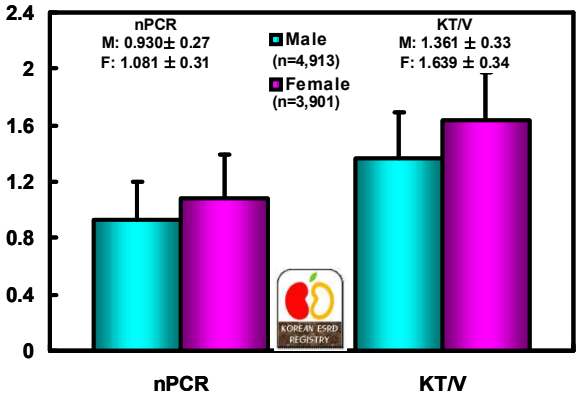

Fig.5-7. Dialysis adequacy parameters (nPCR & KT/V) of hemodialysis patients.

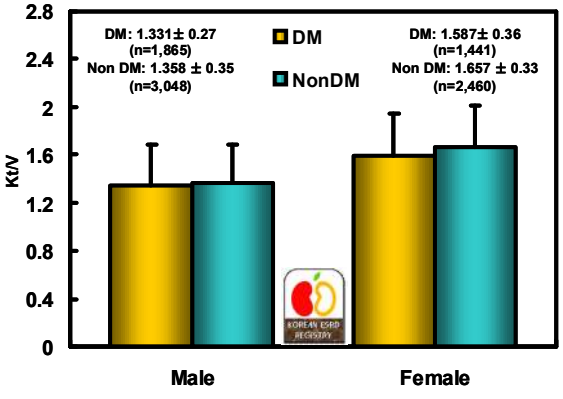

Fig.5-8. Dialysis adequacy parameters (Kt/V) of diabetic and non-diabetic hemodialysis patients.

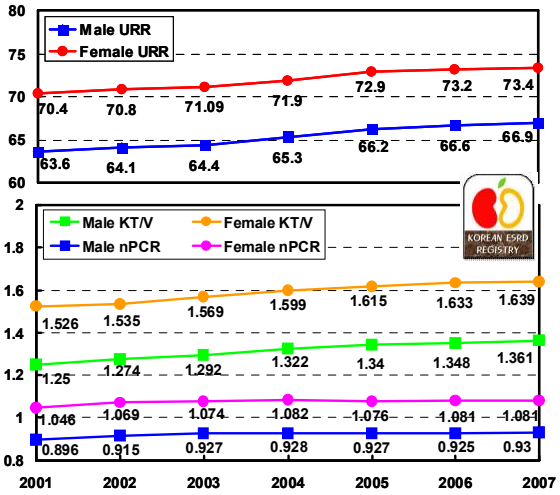

Fig.5-9. Annual changes of dialysis adequacy parameters of hemodialysis patients.

Part 5. Dialysis Therapy (4) – Peritoneal Dialysis

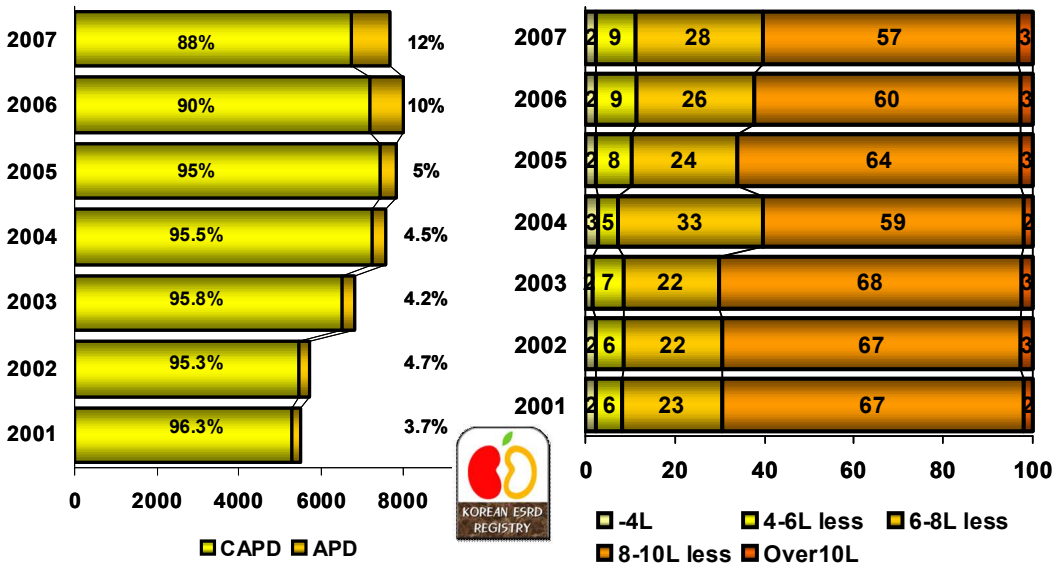

Fig. 5-10. Percent distribution of peritoneal dialysis type and doses per day.

Part 6. Co-morbidity of Dialysis Patients

Table 6-1. Co-morbidity of dialysis patients in 2007*.

Diseases	HD Patients (%)	PD Patients (%)
Cardiac	**16.1**	**15.5**
Coronary Artery Disease	6.4	7.7
Congestive Heart Failure	5.2	4.8
Pericardial Effusion	0.8	0.8
Arrythmia	3.6	2.3
Vascular	**47.6**	**56.9**
Cerebrovascular accident	4.2	3.5
Hypertension	40.8	51.6
Other vascular disease	2.7	1.9
Infection	**6.5**	**8.5**
Pneumonia	1.3	1.9
Tuberculosis	1.0	1.9
Peritonitis	0.5	2.3
Herpes zoster	0.7	0.0
Other Infection	3.0	2.5
Liver disease	**8.8**	**3.1**
Hepatitis B	5.2	2.5
Hepatitis C	3.1	0.6
Congestive Liver	0.1	0.0
Hemochromatosis	0.0	0.0
Other liver diseases	0.4	0.0
Gastrointestinal	**11.4**	**5.4**
Gastric Ulcer	2.5	0.6
Duodenal Ulcer	0.4	0.6
Other Gastrointestinal Diseases	8.5	4.1
Miscellaneous	**9.5**	**10.6**
Malnutrition (Alb<2.5g/dl)	0.7	0.4
Malignancy	1.3	0.2
Hypertensive Retinopathy	1.9	1.9
Uremic Dermatitis	1.8	0.4
Uremic Neuritis	1.8	0.4
Uremic Dementia	0.2	0.0
Uremic Ascites / Pleural Effusion	0.4	0.6
Osteodystrophy	1.4	6.6

* Reported patients number: Hemodialysis =3,239, Perioneal dialysis=483.

Part 7. Causes of Death in Dialysis Patients

Table 7-1. Causes of death (%) in dialysis patients, 1994-2007.

Causes	1994-1996	1998	2001	2002	2003	2004	2005	2006	2007
Cardiac	**27.4**	**33.3**	**26.9**	**27.9**	**31.7**	**35.5**	**30.7**	**33.7**	**31.7**
Myocardial infarction	6.4	6.6	7.7	5.5	7.4	8.3	8.0	9.1	7.5
Cardiac arrest, uremia associated	13.7	17.5	11.2	10.6	11.7	13.6	10.4	11.1	10.8
Cardiac arrest, other cause	7.2	8.1	8.1	11.8	12.5	13.6	12.4	13.5	13.3
Vascular	**17.2**	**18.5**	**22.7**	**15.7**	**19.5**	**17.5**	**17.0**	**16.5**	**17.8**
Cerebrovascular accident	14.3	16.6	15.1	11.6	14.5	12.8	12.3	11.5	13.0
Pulmonary embolus	0.2	0.1	0.5	0.4	0.1	0.2	0.6	0.7	0.5
Gastrointestinal hemorrhage	1.7	2.1	2.7	1.9	3.2	2.0	1.7	1.8	2.7
Gastrointestinal embolism	0.1	0.0	0.1	0.1	0.0	0.4	0.5	0.5	0.1
Other vascular disease	0.9	0.9	4.3	1.7	1.6	2.1	1.9	2.0	1.6
Infection	**13.5**	**18.1**	**17.8**	**21.6**	**20.5**	**19.5**	**20.1**	**18.8**	**20.2**
Pulmonary infection	2.5	3.4	4.5	4.9	3.6	3.7	4.5	4.2	4.4
Septicemia	6.6	10.8	6.9	9.2	9.7	9.4	9.6	8.9	11.7
Tuberculosis	0.3	0.8	0.8	0.5	0.2	0.1	0.3	0.1	0.2
Peritonitis	2.1	2.5	1.1	2.5	2.0	1.5	1.4	1.1	1.1
Other Infection	2.0	1.8	4.5	4.5	4.9	4.8	4.3	4.5	2.9
Liver disease	**3.4**	**3.4**	**2.6**	**2.8**	**2.8**	**2.9**	**2.7**	**2.6**	**2.2**
Liver failure due to hepatitis B	1.8	2.3	1.6	1.2	1.8	2.1	1.5	1.4	1.3
Liver failure due to other cause	1.6	1.3	1.0	1.6	1.0	0.9	1.2	1.1	0.8
Social	**6.2**	**4.2**	**6.3**	**4.7**	**4.4**	**3.6**	**5.4**	**4.2**	**3.3**
Patient refused further treatment	2.9	1.8	2.1	1.8	1.0	1.1	1.1	0.6	1.1
Suicide	2.5	0.9	3.3	1.9	2.3	2.0	3.3	3.0	1.5
Therapy ceased for other reason	0.8	1.9	0.9	1.0	1.0	0.5	1.0	0.6	0.7
Miscellaneous	**32.0**	**19.7**	**23.7**	**27.4**	**21.3**	**21.0**	**24.0**	**24.2**	**24.8**
Cachexia	2.9	3.3	8.1	6.8	6.6	6.1	4.0	3.9	4.4
Malignant disease	2.1	4.1	4.4	4.8	3.5	3.6	6.4	5.4	5.7
Accident	1.2	1.0	0.9	0.5	1.1	0.9	1.4	1.6	1.2
Uncertain	25.8	12.5	10.3	15.3	10.1	10.3	12.3	13.2	13.4

Number of patients :1994-1996=981, 1998=911, 2001=761, 2002=1,256, 2003=894, 2004=1,162, 2005=1,256, 2006=1,248, 2007=1,531.

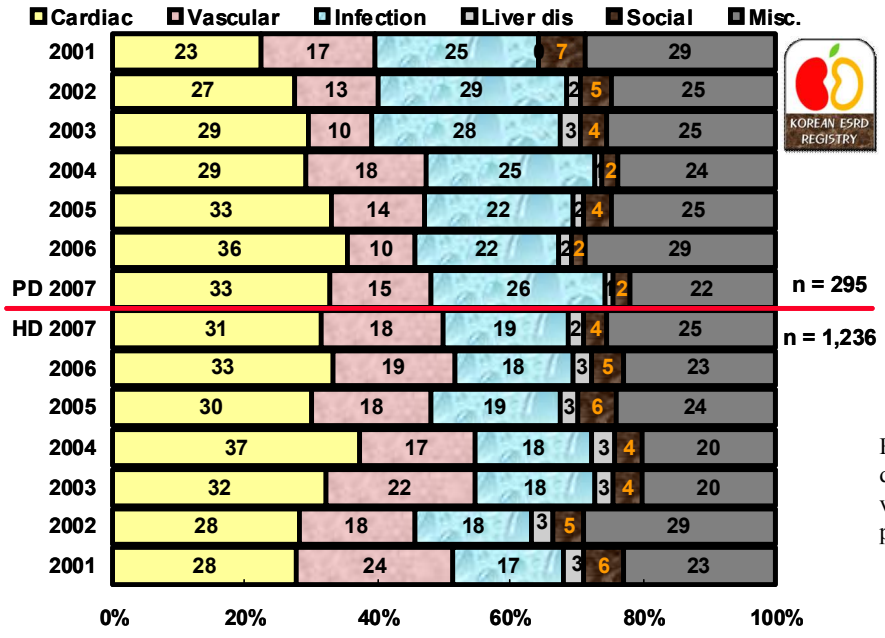

Fig.7-1. Comparison of death causes, hemodialysis versus peritoneal dialysis patients in 2001-2007.

Part 8. Survival of Dialysis Patients (1)- Overall

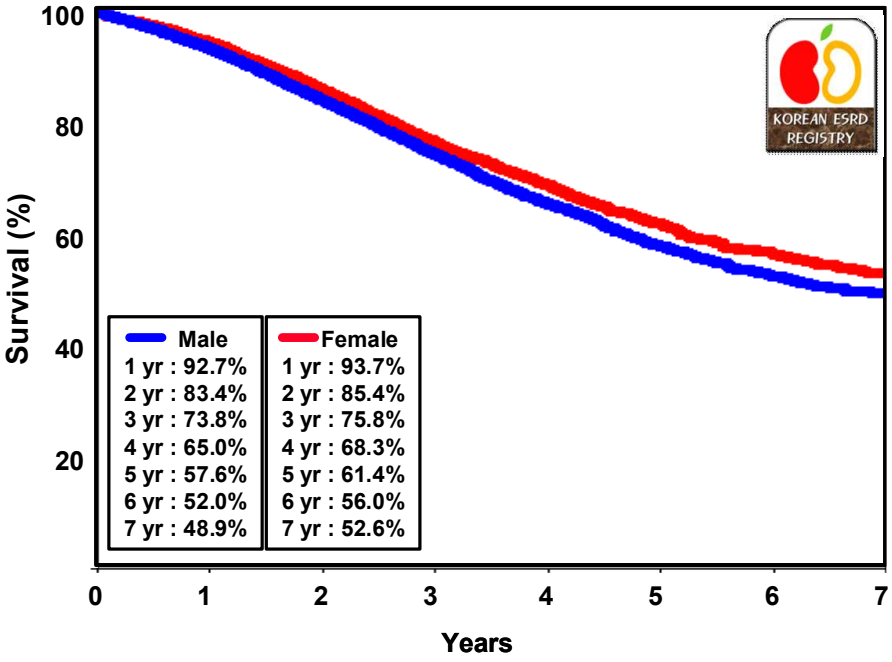

Fig.8-1. Overall registered dialysis patient survival since 2001. (Male :n=15,008, female : n=11,455).

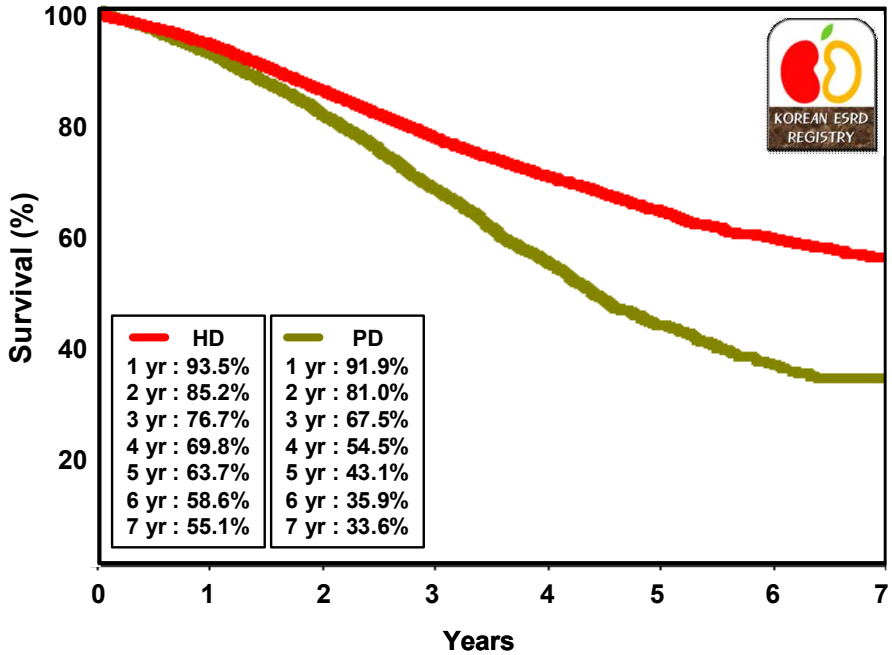

Fig.8-2. HD & PD dialysis patient survival since 2001 (HD :n=19,322, PD : n=7,141).

Part 8. Survival of Dialysis Patients (2)- DM vs Non DM

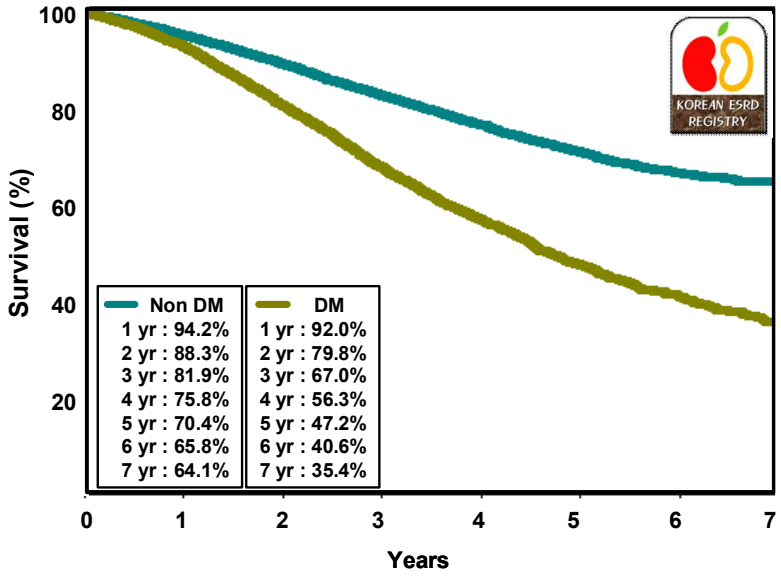

Fig. 8-3. Overall diabetic & non diabetic dialysis patient survival since 2001 (Non DM :n=13,848, DM : n=12,615).

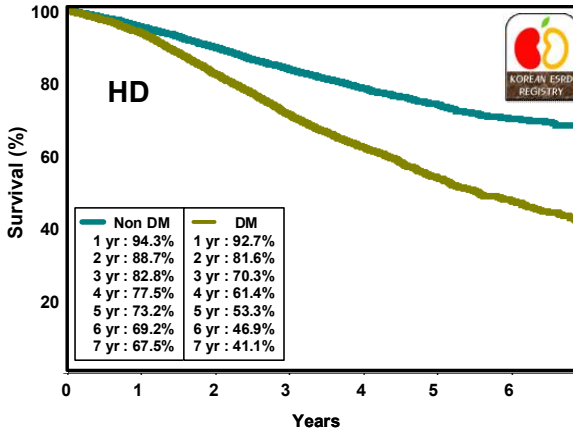

Fig. 8-4 . Diabetic & non diabetic hemodialysis patient survival since 2001 (Non DM : n=9,977, DM : n=9,345).

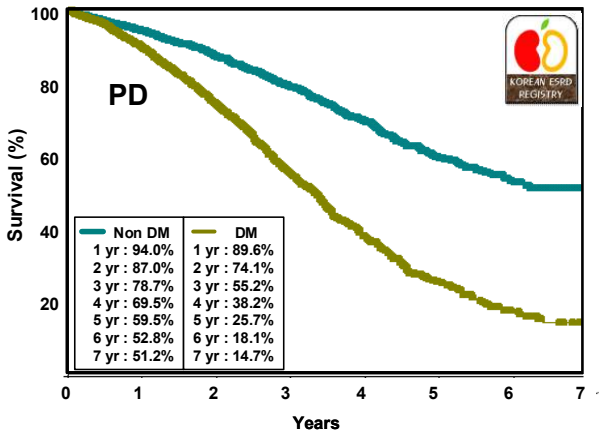

Fig. 8-5. Diabetic & non diabetic peritoneal dialysis patient survival since 2001 (Non DM : n=3,871, DM : n=3,270).

Part 9. Elderly Dialysis Patients (1)

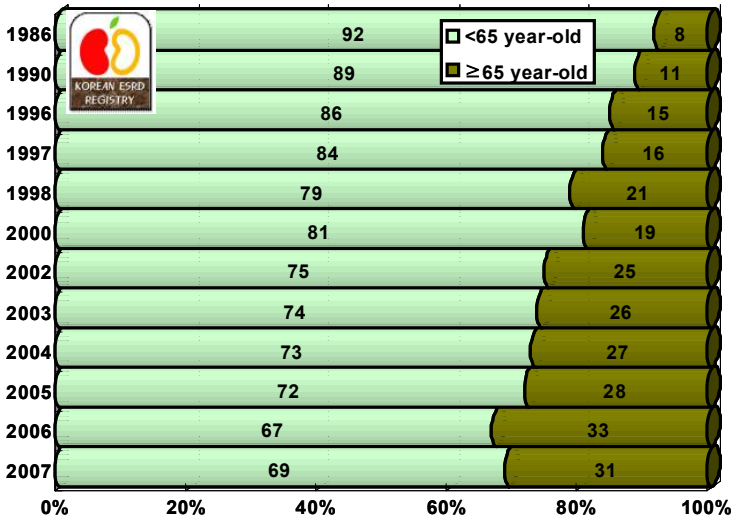

Fig. 9-1. Elderly dialysis patients (≥65 year-old) proportion according to year.

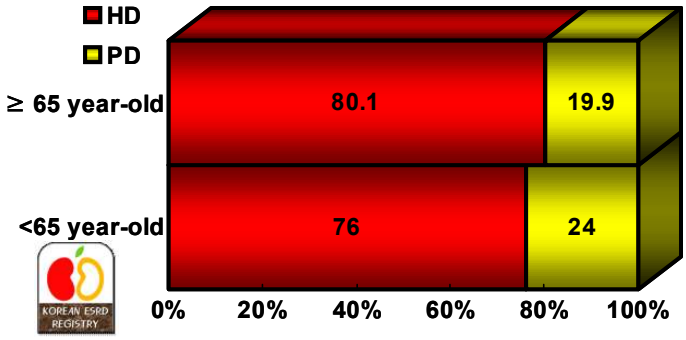

Fig. 9-2. Dialysis modalities of elderly dialysis patients (≥65 year-old) in 2007.

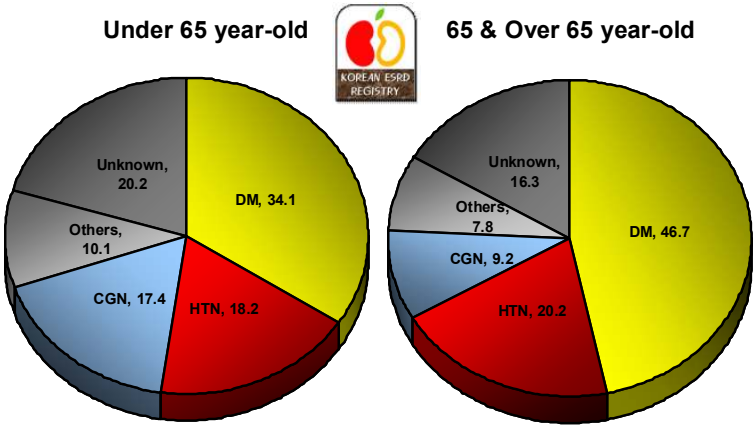

Fig. 9-3. ESRD causes (%) of elderly dialysis patients versus under 65 year-old dialysis patients.

Part 9. Elderly Dialysis Patients (2)

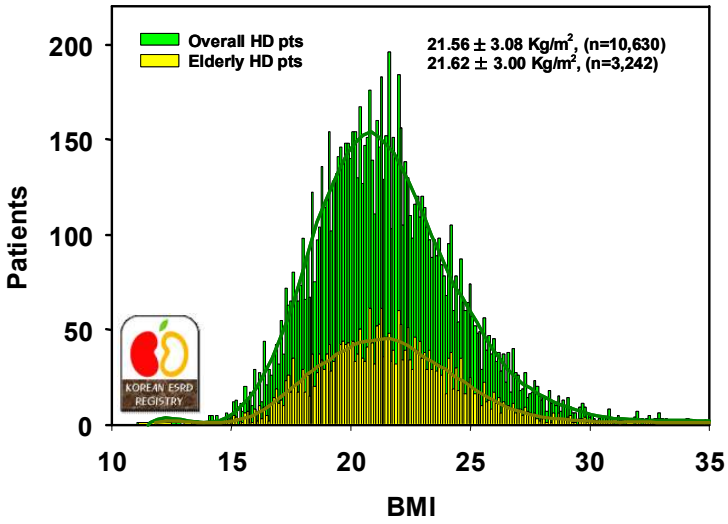

Fig. 9-4. Body mass index of elderly hemodialysis patients (≥65 year-old).

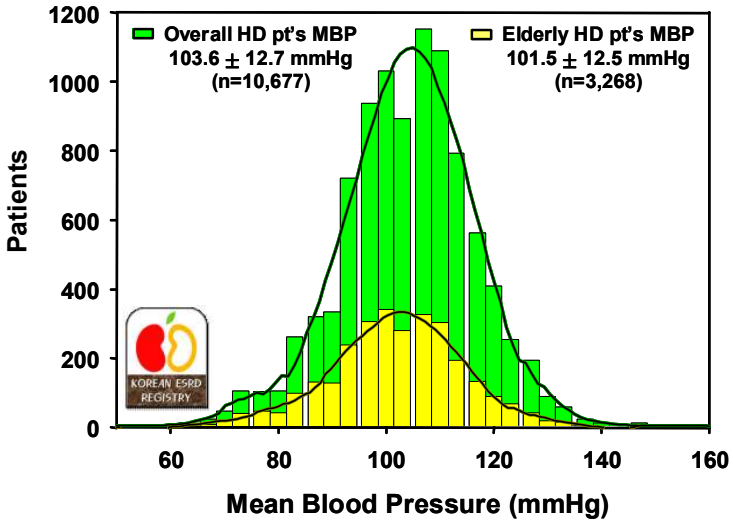

Fig. 9-5. Mean blood pressure of elderly hemodialysis patients (≥65 year-old).

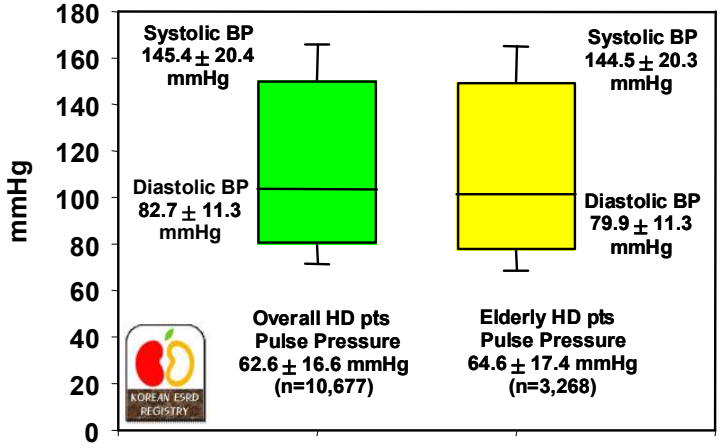

Fig. 9-6. Pulse pressure of elderly hemodialysis patients (≥65 year-old).

Part 9. Elderly Dialysis Patients (3)

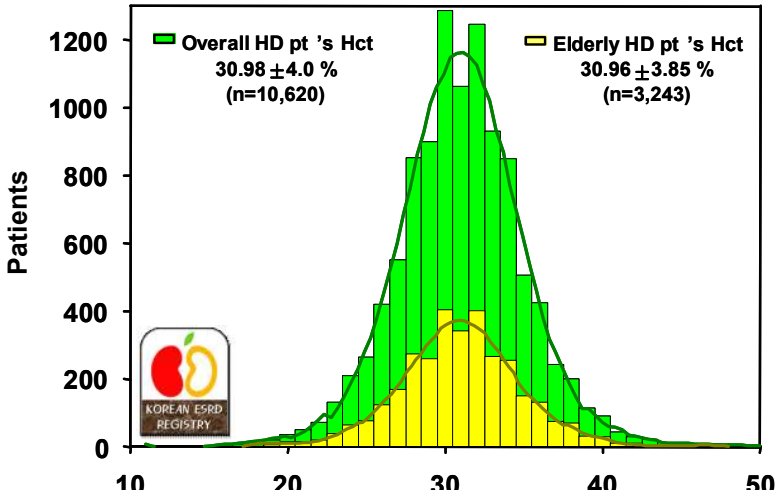

Fig. 9-7. Hematocrit of elderly hemodialysis patients (≥65 year-old).

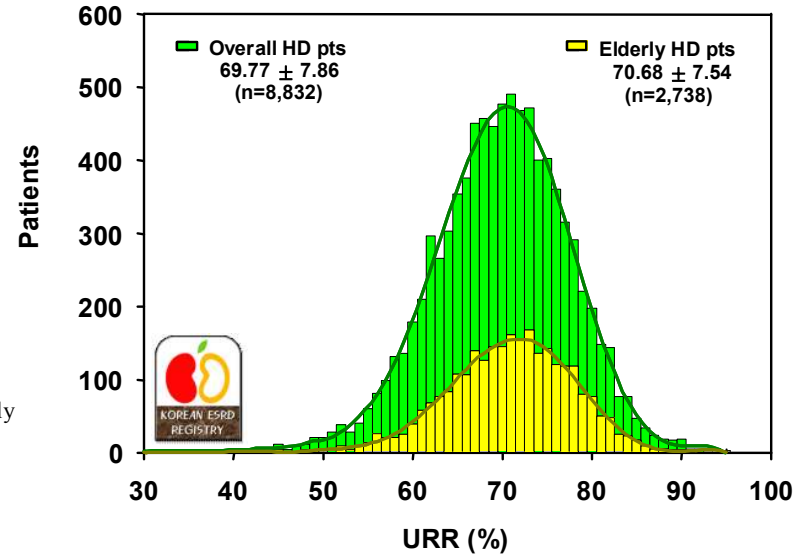

Fig. 9-8. Urea reduation ratio of elderly hemodialysis patients (≥65 year-old).

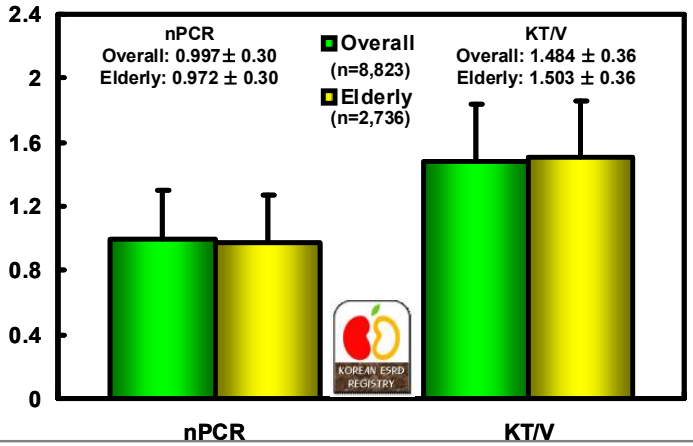

Fig. 9-9. nPCR and KT/V of elderly hemodialysis patients (≥65 year-old).

Part 10. Kidney Transplantation

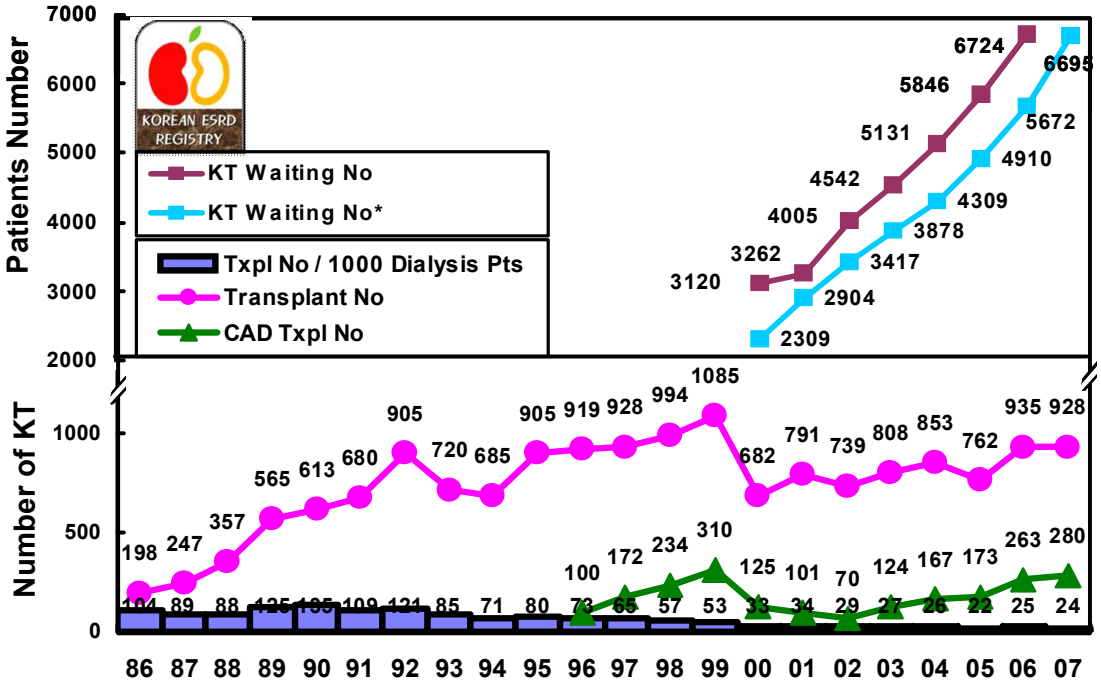

Fig.10-1. Annual number of kidney transplantation in Korea (including KONOS: Korean Network for Organ Sharing data). * Survived KT waiting patient number at the end of each year.

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