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Shared Decision-Making Facilitates Non-Hemodialysis Renal Replacement Therapy: A Retrospective Study at Seoul National University Bundang Hospital

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Objectives : In patients with chronic kidney disease approaching end-stage kidney disease, advanced shared decision-making (SDM) is pivotal for choosing the appropriate renal replacement therapy (RRT). We investigated the influence of an SDM program on the preference for kidney transplantation or peritoneal dialysis (KT/PD) over hemodialysis (HD), and its potential to reduce unplanned dialysis.
Methods : The SDM program commenced at Seoul National University Bundang Hospital, South Korea, in March 2021. Adult patients expected to reach end-stage within a year, as assessed by their physicians, were enrolled in the SDM. Participants received comprehensive education through materials and a video created for this program, followed by in-depth discussions with physicians based on self-assessment items at months 0 and 2, contrasting with standard brief consultations. We gathered data on chronic kidney disease patients with an estimated GFR of less than 15 ml/min/1.73m^2 for over 3 months, from March 2018 to March 2023, excluding those with contraindications for PD. The likelihood of choosing KT/PD over HD and unplanned dialysis before and after the SDM period were compared using logistic regressions. Attending physicians were categorized based on their participation in the SDM, and we analyzed the interaction between SDM implementation and physicians' participation.
Results : Among 556 patients initiating RRT, 34.0% opted for KT/PD, and 41.7% underwent unplanned hemodialysis via central venous catheters before commencing long-term RRT. Before SDM, there was no significant difference in the selection of KT/PD over HD between participating and non-participating physicians. Post-SDM, patients under SDM-participating physicians, significantly favored KT/PD (OR, 4.24; 95% CI, 1.29-14.50), unlike those under non-participating physicians (Table 1). SDM could not significantly reduce unplanned dialysis in this cohort, possibly due to the limited sample size (Table 2).
Conclusions : Our SDM program demonstrated a significant shift in RRT modality preference towards KT/PD, underscoring the critical importance of overcoming informational barriers.

Table 1.png

Table 1. Impact of SDM on choosing KT/PD over HD, by physician participation, before and after SDM implementation.

		Model 1*		Model 2†		Model 3‡	
SDM	Participation	Odds ratios (95% CI)	*P*-value	Odds ratios (95% CI)	*P*-value	Odds ratios (95% CI)	*P*-value
Before	No	1 (ref)		1 (ref)		1 (ref)	
	Yes	1.05 (0.69-1.57)	0.830	1.08 (0.66-1.77)	0.755	1.34 (0.73-2.46)	0.337
After	No	0.53 (0.26-1.02)	0.070	0.41 (0.10-1.65)	0.203	0.32 (0.07-1.40)	0.127
	Yes	4.09 (1.71-10.19)	0.002§	5.41 (1.87-16.39)	0.002§	4.24 (1.29-14.50)	0.019§

Abbreviations. SDM, shared-decision making; CI, confidence interval.

*Model 1: unadjusted logistic regression including the interaction term between SDM implementation and attending physicians' participation.

†Model 2: Model 1 + adjustments for demographic factors, including age, gender, cardiovascular disease, dementia, hemiplegia, any malignancy, diabetes mellitus, glomerulonephritis, year of the index date, and modified Charlson Comorbidity Index.

‡Model 3: Model 2 + adjustments for laboratory factors, including serum levels of creatinine, hemoglobin, potassium, total bicarbonate, and phosphorus.

§$P < 0.05$

Table 1.png

Table 2. Impact of SDM on unplanned hemodialysis via central venous catheter, by physician participation, before and after SDM implementation.

		Model 1*		Model 2†		Model 3‡	
SDM	Participation	Odds ratios (95% CI)	*P*-value	Odds ratios (95% CI)	*P*-value	Odds ratios (95% CI)	*P*-value
Before	No	1 (ref)		1 (ref)		1 (ref)	
	Yes	1.15 (0.78-1.70)	0.480	1.10 (0.73-1.67)	0.637	1.05 (0.62-1.77)	0.866
After	No	1.35 (0.76-2.38)	0.307	1.06 (0.38-2.94)	0.912	0.82 (0.26-2.52)	0.724
	Yes	0.58 (0.26-1.30)	0.188	0.57 (0.24-1.33)	0.193	0.59 (0.22-1.59)	0.298

Abbreviations. SDM, shared-decision making; CI, confidence interval.

*Model 1: unadjusted logistic regression including the interaction term between SDM implementation and attending physicians' participation.

†Model 2: Model 1 + adjustments for demographic factors, including age, gender, cardiovascular disease, dementia, hemiplegia, any malignancy, diabetes mellitus, glomerulonephritis, year of the index date, and modified Charlson Comorbidity Index.

‡Model 3: Model 2 + adjustments for laboratory factors, including serum levels of creatinine, hemoglobin, potassium, total bicarbonate, and phosphorus.