Editorial

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# “Back to the future” of the medical care payment system for hemodialysis patients in South Korea over the past 20 years

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South Korea has National Health Insurance (NHI) that guarantees fair medical care to all Korean people. In 1983, NHI introduced a special system for calculating the portion of the health insurance premium along with the registration of rare incurable diseases for chronic kidney disease (CKD) patients, thereby reducing the patient’s out-of-pocket expenses and reducing the number of patients who cannot receive dialysis due to financial reasons. However, the total number of patients with end-stage kidney disease (ESKD) requiring renal replacement therapy has been steadily increasing since 2010, and as a result, the number of patients with ESKD has approximately doubled in the late 2010s compared to 2010 [1]. In addition to these support measures, South Korea introduced a fixed-payment system for medical aid hemodialysis in 2001 [2]. The government fixed the cost of hemodialysis at 136,000 Korean won (KRW) per session to prevent the burden from increasing even if the number of CKD patients receiving medical aid increases. The purpose was to prevent the volatility of financial expenditures according to patient characteristics by including all of the doctor’s consultation fees, hemodialysis machine fees, material fees, dialysis solution, essential oral medications, erythropoietin, and examination fees administered on the day of dialysis in a single fee. Unlike the NHI fee payment system in which the fee is determined by contracting the unit price (conversion index) per point between the insurer and the supplier (hospital) based on the Resource Based Relative Value Scale, the fixed-payment system to protect medical aid finances has been fixed at 136,000 KRW for 13 years since 2001, and the quality of medical services for long-term medical aid patients has decreased.

Since the flat rate was raised to 146,000 KRW in 2014, efforts have been made to provide sufficient medical services to patients while maintaining the fixed-payment system. In August 2018, the “Standards and General Standards for Medical Aid Fees (SGSMA)” notice was revised to allow separate billing of the statement of fees for procedures such as vascular interventions or for diseases other than CKD complications. The SGSMA revised in February 2021 partially changes the method of applying the hemodialysis medical aid fee from the fixed-payment system back to

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| Notice Number | Medical Fee | Contents |
|---|---|---|
| Ministry of Health and Welfare Notice 2001-56 | 136,000 KRW | Adopted a fixed-payment system for hemodialysis treatment |
| Korean Association of Persons with Disabilities - National Assembly Petition in 2005 | | |
| Cost analysis study by the Korean Society of Nephrology in 2005 | | |
| Improving payment system for medical aid patients who get hemodialysis treatment. Kyung Sang National University Health Promotion Support Team in 2007 | | |
| Ministry of Health and Welfare Notice 2014-50 | 146,120 KRW | Central Medical Aid Review Committee decides to increase medical fees for hemodialysis |
| Constitutional Court 2020. 4. 23. Decision 2017 Heonma 103: A constitutional petition was filed in 2017 against fixed-payment system, and the Constitutional Court rejected the petition | | |
| The unconstitutionality of case payment system of medical aid hemodialysis patients; Tae-Seop Shin, 2017 | | |
| Ministry of Health and Welfare Notice 2018-143 | 146,120 KRW | Expanding the criteria for medical benefits for hemodialysis |
| Constitutional limits of the medical fee payment system and the unconstitutionality of fixed payment system; Doo-youn Hyun, 2020 | | |
| Ministry of Health and Welfare Notice 2021-64 | Hospital: 1,315.22 KRW Clinic: 1,168.07 KRW | Fixed-payment to unit price per value scale system |

**Figure 1. Efforts to improve the insurance coverage system for hemodialysis patients over the past 20 years.**
KRW, Korean won.

the relative value system. This is the result of the efforts of academia, the medical community, and civic groups over the past 20 years, as well as the hard work of the people involved [3–5] (Fig. 1) .

In a study comparing the number of hemodialysis sessions for one year from the introduction of the fixed-payment system in 2001 to 2002, medical expenses for medical aid patients decreased in both men and women and all age groups, while medical expenses for health insurance patients increased, showing a significant difference in medical expenses between the two groups ($p < 0.05$). There was no statistically significant difference in the number of dialysis sessions for medical aid patients compared to health insurance patients after the introduction of the fixed-payment system [6] (Fig. 2).

Although the fixed-payment system induced a decrease in dialysis medical expenses, medical institutions did not increase the number of dialysis sessions and showed changes in treatment behavior that increased health insurance medical expenses, creating a medical environment that was unfavorable to medical aid patients. The average medical expenses per patient in 2021, which empirically demonstrates the expected effects of the case payment system reform, increased by an average of about 2,000 KRW compared to 2020 ($\beta = 1{,}998.25$, $p < 0.0001$). The average number of visits per week increased slightly in 2021 compared to 2020. However, this difference was within the usual range. This suggests that the reform of the case payment system did not bring about dramatic changes in the frequency of actual medical use [7](Fig. 3).

In conclusion, even when the fixed-payment system was introduced in 2001, medical professionals tried not to reduce the quality of treatment for insurance-covered patients and did not show any drastic changes in medical behavior for the sake of hospital profits in 2021. While maintaining patient treatment for 20 years, medical professionals have made efforts to create the most suitable model for patients and are creating a system that can maintain insurance finances while expanding coverage not only for hemodialysis patients who require catastrophic treatment costs but also for the nation [8–10]. These research results are the basis for medical professionals to work on improv-

**Table 4.** Impact of the case payment system on dialysis frequencies and expenditure of Medical Aid hemodialysis patients

| Variable | Changes in the total number of monthly hemodialysis treatments from the year of 2001 to 2002 | | Changes in the amount of monthly claims for hemodialysis treatments from the year of 2001 to 2002 | |
|---|---|---|---|---|
| | β(SE) | t-stat. | β(SE) | t-stat. |
| Gender | | | | |
| male | Ref. | | Ref. | |
| female | 0.02(0.07) | 0.29 | 3286.07(9137.56) | 0.36 |
| Age | 0.01(0.00) | 2.01* | 382.53(354.13) | 1.08 |
| Medical security system | | | | |
| Medical Insurance | Ref. | | Ref. | |
| Medial Aid | -0.02(0.07) | -0.21 | -70725(9889.46) | -7.15** |
| Hypertension | | | | |
| no | Ref. | | Ref. | |
| yes | 0.04(0.14) | 0.31 | 18628(19637.30) | 0.94 |
| Diabetes | | | | |
| no | Ref. | | Ref. | |
| yes | 0.25(0.28) | 0.90 | 32198(39075.42) | 0.82 |
| Location | | | | |
| large cities | Ref. | | Ref. | |
| small cities/others | -0.03(0.07) | -0.46 | -4437.48(9997.22) | -0.44 |
| Ownership | | | | |
| private (single) | Ref. | | Ref. | |
| corporate | 0.31(0.09) | 3.21** | 16494(13815.36) | 1.19 |
| private (group) | 0.05(0.13) | 0.39 | 9985.06(18511.99) | 0.53 |
| Setting | | | | |
| clinics | Ref. | | Ref. | |
| general hosp. | -0.52(0.12) | -4.51** | -32916(16140.71) | -2.03* |
| tertiary hosp. | -0.61(0.11) | -5.69** | -3623.06(15041.00) | -0.24 |
| Total number of monthly hemodialysis treatments in 2001 | -0.53 | -42.01 | | |
| | 0.53(0.01) | 42.01** | | |
| Total amount of monthly claims for hemodialysis treatments in 2001 | | | -0.60(0.01) | -50.42** |
| Adj-R2(%) | 26.17 | | 34.65 | |

* p<0.05 ** p<0.01

**Figure 2. The change in monthly hemodialysis sessions for 1 year from the introduction of the fixed-payment system in 2001 to 2002.** Reused Table 4 from Lee et al. (*J Prev Med Public Health* 2004;37:260-266) [6] according to the Creative Commons License.

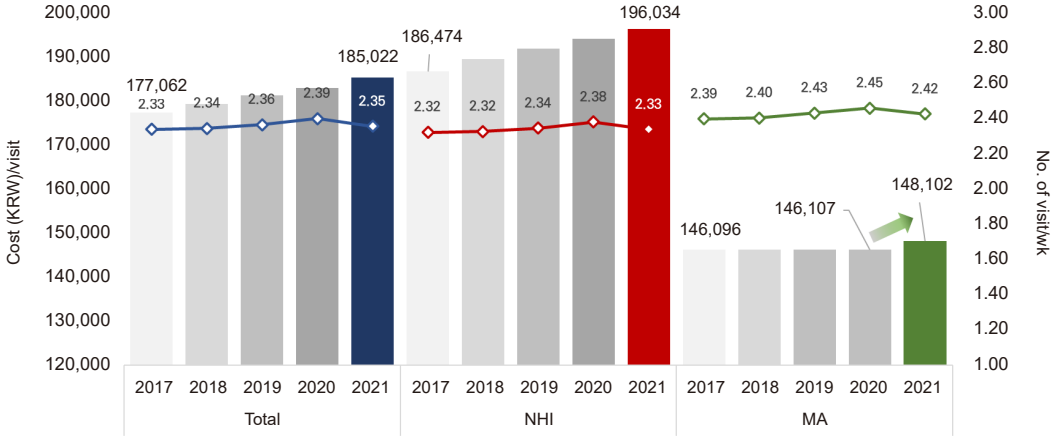


**Figure 2. Trends of dialysis cost per visit and the average number of visits per week by insurer.**
KRW, Korean won; MA, medical assistance; NHI, National Health Insurance.

**Figure 3. Trends of dialysis cost per visit and the average number of visits per week by insurer.** Reused Figure 2 from Kim et al. (*Kidney Res Clin Pract* 2025;44:444-451) [7] according to the Creative Commons License.

ing the system in addition to the medical treatment process for dialysis patients over the next 20 years, and the reason why they should trust and cooperate with dialysis patients including peritoneal dialysis, transplant patients, CKD patients in the pre-dialysis stage, and the health insurance authorities.

## Conflicts of interest

The author has no conflicts of interest to declare.

## Data sharing statement

The data presented in this study are available from the corresponding author upon reasonable request.

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