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Dialysis Efficacy of Medium Cut-off Dialyzer Compared to High-flux Dialyzer and Hemodiafiltration in Hemodialysis Patients

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Objectives: Medium cut-off (MCO) membrane, which is a novel dialyzer, provides more efficient solute clearance of middle molecule than the high-flux (HF) dialyzer. Therefore, it was expected to improve complications such as patient mortality on hemodialysis patients. However, it was also concerned to occur malnutrition as removing albumin. We evaluated clinical effects of medium cut-off membrane compared to high-flux dialyzer and hemodiafiltration (HDF) in patients on maintenance hemodialysis (MHD).

Methods: We reviewed 73 patients on MHD in the hospital. A total of 37 patients were enrolled after excluding MHD patients less than 6 months in our hospital, cancer within 5 years, and cardiovascular disease within 6 months. They were divided to the three groups (MCO, n= 20; HF, n=8; HDF, n=9). Data including dry weight, intradialytic weight gain, laboratory findings, dialysis efficacy and medication prescription was obtained at the time of initiation of medium cut-off (MCO) membrane and hemodiafiltration (HDF) and at 6 months after those treatment. Remaining patients received to continuously MHD under HF dialyzer.

Results: The mean age of the patients was 60.5 ± 13.3 months, with 62.2% male sex. During 6 months after applying MCO dialyzer, serum albumin levels were not different (3.8 ± 0.5 for initiation vs. 3.8 ± 0.3 for 6 months; $P>0.05$). Dialysis efficacy of MCO dialyzer via urea reduction ratio and Kt/V urea was not different after 6 months (70.0 ± 5.8 and 1.5 ± 0.3 for initiation vs. 71.3 ± 5.0 and 1.5 ± 0.2 for 6 months, respectively; $P>0.05$). On the other hand, serum albumin levels and dialysis efficacy of MCO dialyzer were not superior to the HF dialyzer and HDF ($P>0.05$).

Conclusions: The dialysis efficacy of MCO dialyzer was not superior to the HF membrane and HDF.