[Purpose]
We investigated the nutritional status, dose of erythropoiesis-stimulating agent (ESA), and complaints before and after change from hemodialysis (HD) to predialysis online hemodiafiltration.

[Target/Method]
HD and predialysis online hemodiafiltration utilize dialysate (<10^4 CFU/mL and <0.001 EU/mL) obtained from the central dialysis fluid delivery system. We observed 71 patients undergoing HD (Table 1) whose treatment was changed from HD to 30L predialysis online hemodiafiltration (30L; Table 2) for 8 months (Table 3). Evaluated items were nutritional status (n-PCR, serum phosphate, albumin, GNRI, and DW), dose of ESA (epoetin κ and darbepoetin α), and trends of β2-MG (MW:11,800) and α1-MG (MW:33,000) removal rates. Epoetin κ and darbepoetin α were evaluated for only 57 patients who had no bleeding in the median of CRP <0.5mg/dL. Moreover, complaints were evaluated for six symptoms (joint pain, itching, frustration, falling asleep, sound sleep, and appetite) with five grades of face scale (0: Not, 1: Somewhat, 2: Moderately, 3: Very much, and 4: Extremely). Statistical tests were performed using the Wilcoxon signed-rank test for baseline HD (P < 0.05*, P < 0.01**).

[Results]

Fig. 1 Results of the nutritional status (N = 71)

Fig. 2 Results showing the anemia status and decreasing dose of ESA

[Discussion]
After changing from HD to 30L and after 8 months of observation, the predialysis serum albumin level and dose of ESA decreased and itching improved. 30L is considered to improve the removal of low-molecular-weight proteins by filtration. In particular, it is suggested that the removal rate in the α1-MG region is increased when compared with HD, thereby eliminating hematopoietic blocking factors and causative agents of itching, improving ESA usage, and alleviating itching. The predialysis serum albumin level was 3.67 ± 0.33 g/dL even after 8 months, although it decreased compared with that at the time of HD. This serum albumin level is not considered to be an excessive amount of albumin leakage by online HDF as it may be decreased by seasonal variation and aging.

[Conclusions]
Dose of ESA and complaints of itching decreased by changing the treatment from HD to 30L.