

## KSN 2017 Abstract

KSN-17-P243

### Effect of oral vitamin D treatment on peritoneal membrane function in patients with peritoneal dialysis

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**Objectives :** Clinical and experimental studies have shown that long-term exposure of the peritoneal membrane to dialysis solution results in injury to mesothelial cells. Glucose-enriched peritoneal dialysis solutions induced RAS activation and oxidative stress has been postulated as one of the major factors leading to anatomic and functional changes of the peritoneal membrane. Vitamin D has been shown to be effectively suppress RAS activation and oxidative stress in many animal models and in vitro experiments. Considering that high glucose solution causes RAS activation and oxidative stress, it can be possible that vitamin D treatment may provide beneficial effects on peritoneal membrane function in PD patients.

**Methods :** A total of 95 PD patients were prospectively observed to investigate the effects of vitamin D treatment on peritoneal membrane function for 1 year. Vitamin D was used in 58 patients, and 37 patients did not use vitamin D.

**Results :** At baseline, most of the clinical parameters including age, BP, vintage of PD, residual renal function, weekly Kt/V, UF volume of PD, PET status did not show significant differences between two groups except iPTH levels (Vitamin D user  $264 \pm 97.5$  vs. Non-user  $56.3 \pm 21.3$ ). After 1 year, most of clinical parameters did not show significant differences between vitamin D user group and non-user group. Most patients increased body weight, serum cholesterol levels after 1 year, whereas iPTH levels were significantly increased in vitamin D non-user group. In terms of peritoneal membrane function such as UF volume of PD, weekly Kt/V and residual renal function, there was no significant differences between two groups. However, cytokine levels in PD effluent such as MCP-1 and VEGF were significantly lower in vitamin D user group.

**Conclusions :** These findings suggest that vitamin D treatment in PD patients did not effect on peritoneal membrane function in short term observation period. However, vitamin D therapy showed the decreased level of cytokines in PD effluent, which suggest the possible beneficial role of vitamin D therapy. It may be needed a more long-term follow up study in PD patients.

**Keywords :** vitamin D, Oxidative stress, RAS, Cytokine