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Prognostic value of serum and dialysate APX-501 in chronic dialysis

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Objectives: Patients on chronic dialysis are known to be in a chronic inflammation associated with increased oxidative injury, which results in increased morbidity and mortality Recently APX-501 protein was identified to have regulatory role on oxidative stress. In the present study, we examined the clinical utility of APX-501 levels in serum and dialysate in chronic dialysis patients.

Methods: This study was a multicenter, prospective study that examined the level of serum and dialysate APX-501 in patients on chronic dialysis. Patients on dialysis (both peritoneal and hemodialysis) were enrolled between January 2016 to February 2018**.** Serum APX-501 level was measured using ELISA method. During follow up period of 625±172.8 days, time to overall mortality was recorded as the primary endpoint. For secondary endpoint, admission for major adverse cardiac events (MACE) and admission due to infection were recorded. Kaplan-Meier analysis was performed.

Results: Of 216 patients, patient on PD consisted of 136 patients. 37.5% of PD patients were enrolled initiating PD as the first dialysis modality (defined as new PD). During the follow up period, 15 patients died (6.9%), 27 experienced MACE (12.5%), 64 admitted to the hospital for infection from any cause (29.6%) and PD peritonitis was reported in 35 patients (25.7% of PD group, of which 17(48.6%) were in new PD group). For PD patients who had higher level of baseline dialysate APX-501 level, showed significant increased risk of incidence on infection from any cause (log rank p=0.024) and PD peritonitis (log rank p= 0.026).

Conclusions: Dialysate APX-501 level may predict the risk of infection, especially the risk of PD peritonitis in PD patients, but not the serum APX-501 level. Studies for predictability for imminent PD peritonitis should be ensued.