## Abstracts



## CARDIAC AUTONOMIC DYSFUNCTION PREDICTS POOR PERITONEAL DIALYSIS TECHNIQUE SURVIVAL

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**INTRODUCTION:** The relationship problem of cardiac autonomic dysfunction in peritoneal dialysis (PD) patients to dialysis adequacy and technique survival has never been investigated before.

**METHODS:** In this cross-sectional study, the associations between heart rate variability (HRV) measures and the indicators of dialysis adequacy in 44 PD patients (average age  $50.8 \pm 12.5$ ) were analysed. HRV was measured by using 5-min recordings of a stationary system by a standardized method. Both temporal domain and spectral domain parameters were analysed. The dialysis adequacy indices were evaluated taking into account weekly creatinine clearance (CrCl) and total weekly urea clearance (Kt/V). All the statistical analyses were performed using MedCalc.

**RESULTS:** A significantly higher activity of the sympathetic cardiac activity was observed in the patients with inadequate dialysis dose (Kt/V<1.7), as evidenced by a decrease in SDNN (53.5 [28.5-73] vs 121 [72-195] p = 0.001). The parasympathetic activity of both temporal (RMSSD, CV) and spectral parameters of HRV (HF) had a moderate negative correlation with the PD adequacy (r = -0.43, p = 0.008; r = -0.36, p = 0.006 and r = -0.37, p = 0.005, according to the indicators). The spectral domain parameter LF, which reflected the relative vasomotor centre activity, had a direct correlation with the status of residual renal function (r = 0.53; p < 0.0001).

The preservation of dialysis adequacy was significantly dependent on the sympathetic activity (VLF and CV). The increase of 30% or more for VLF demonstrated the technique survival as  $21.8 \pm 2$  (95% CI 17.8-25.9) months, while the technique survival in the patients with normal sympathetic activity (VLF<30%) was  $46.5 \pm 5.2$  (95% CI 36.4-56.6) months (p = 0.0001) (Fig. 1).



Fig. 1. Cumulative survival of PD technique by VLF ratio above and below the median. **CONCLUSIONS:** Our study has demonstrated the relationship of cardiac autonomic dysfunction with the PD adequacy. We suggest that the reduction in sympathetic hyperactivity can improve the PD adequacy and technique survival.