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Theme : Rehabilitation, Quality of Life and Survival

N-ANP and BNP Both Predict Survival in Patients on Peritoneal Dialysis

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Objective: Different subtypes of the natriuretic peptide family have emerged as diagnostic markers for heart failure and have been identified as predictors of mortality in the hemodialysis population. In this study we compared the predictive power of amino-terminal atrial natriuretic peptide (N-ANP) and B-type natriuretic peptide (BNP) for mortality in peritoneal dialysis (PD) patients.

Methods: From the NECOSAD-cohort, a large, prospective multi-centre study (N=1464), we selected a random sample of 68 peritoneal dialysis patients without clinically overt heart failure; Patients were included at the time of initiation of dialysis, and followed up at regular intervals. Six months after the start of dialysis blood was collected for determination of N-ANP and BNP. To assess the risk for all-cause mortality the PD patient group was dichotomized based upon its median N-ANP or BNP level. Unadjusted hazard ratios were calculated with Cox proportional hazards analysis. Subsequently, the hazard ratios were adjusted for age, comorbidity, and residual GFR.

Results: At the end of follow-up (max. 4.5 yrs), the mortality rate was 15%. N-ANP levels were significantly higher than BNP levels, 1112 pmol/L versus 7.5 pmol/L, respectively. Patients with N-ANP levels above median had an increased risk for mortality with a hazard ratio of 11.3 (p = 0.02). PD patients with a BNP level above median had a significantly increased mortality risk as well, hazard ratio 11.3 (p = 0.02). After adjustment for age, comorbidity and residual GFR, a trend towards an increased mortality risk was seen for patients with a high N-ANP hazard ratio 7.9 (p = 0.07), whereas BNP remained a significant predictor of mortality, hazard ratio 8.5 (p = 0.05).

Conclusion: BNP and N-ANP are equally predictive for survival in patients on peritoneal dialysis. However, after adjustment for age, comorbidity and residual GFR, only BNP preserves its predictive power.