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Association of copeptin levels with thirst and clinical outcomes in dialysis patients

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Objectives : Copeptin is a vasopressin precursor secreted in response to thirst, regulation of water, and electrolyte homeostasis. In addition, copeptin is also associated with the risk of cardiovascular disease and death. Thirsty is a common symptom in dialysis patients, but studies are lacking. We hypothesized that copeptin levels in dialysis patients would be associated with thirst, which would be related not only to increased IDWG but also to the risk of cardiovascular disease and death.
Methods : Patients undergoing maintenance dialysis for more than 3 months at the 2 centers of Gyeongsang National University Hospital in Jinju and Changwon were prospectively enrolled, and serum copeptin levels were measured using an ELISA kit. In addition, the level of thirst was checked using the thirsty-VAS, and saliva volume for 5 minutes before dialysis was measured. Cardiovascular outcomes were defined as including new-onset cardiovascular disease and overall death.
Results : A total of 88 dialysis patients were analyzed. The mean age was 64.1 ± 9.7 years, and the serum copeptin level was 102.7 ± 157.3 pmol/L. When comparing the three groups according to copeptin level, the highest copeptin group had a significantly higher proportion of men and higher potassium levels, while the albumin level was the lowest compared to the other groups. Although there was no statistical significance, the highest copeptin group had the highest thirst score and the lowest saliva volume. A significant relationship was observed between serum copeptin level and IDWG, but no statistical significance was found for saliva volume and thirst score. During the average follow-up period of 32.4 months, CV outcomes occurred in 25 patients (28.4%). The highest copeptin group was significantly related to cardiovascular outcomes compared to the lowest group.
Conclusions : In dialysis patients, high serum copeptin levels were not significantly associated with thirst or saliva volume but with IDWG and CV outcomes.