1. Introduction

Although hyponatremia (HypoNa) on admission is a predictor of poor prognosis in acute heart failure (HF) patients, little is known about the association between changes in serum sodium level (sNa) in those with CKD.

The aim of this post hoc analysis from the K-STAR study was to investigate the clinical significance of pre-existing HypoNa in patients with congestive HF (CHF) complicated by advanced CKD (eGFR < 45 mL/min/1.73m²) in the very early treatment phase.

K-STAR Study

The K-STAR was a multicenter, open-labeled, randomized, and controlled prospective clinical study consisting of 81 Japanese patients with CHF and residual signs of congestion despite oral furosemide (FUR) treatment (≥ 40 mg/day).

They were randomly assigned to 7-day treatment with either ≤ 15 mg/day of newly added tolvaptan (TLV) or ≤ 40 mg/day of increased FUR.

2. Patients and Methods

The posthoc analysis was conducted for 73 patients, except those for whom some results were not available within 2 days from baseline.

We classified these patients into two groups according to their baseline sNa: HypoNa (sNa ≤ 135 mEq/L, n = 15) and non-HypoNa (sNa > 135 mEq/L, n = 58), and compared various parameters between the groups at baseline (day 1).

Subsequently, each group was stratified into two subgroups (increased FUR:added TLV), and the differences (Δ) of urine and serum parameters, and blood pressure findings between day 1 and 3 (48 hours), were compared between the subgroups in each group.

Statistical significance was defined as P < 0.05 (* < 0.05, ** < 0.01 and * < 0.001 in the figures).