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Abstract:

Worsening renal function (WRF) is a frequent complication in acute heart failure (AHF) with a controversial prognostic value. We aimed to study the usefulness of natriuresis to evaluate WRF.

We conducted an observational, prospective, multicenter study of patients with AHF who underwent a furosemide stress test. The patients were classified according to whether WRF was present or absent and according to the median natriuretic response. The main endpoint was the combination of mortality, rehospitalization due to HF, and heart transplant at 6 months of follow-up.

One hundred and fifty-six patients were enrolled, and WRF occurred in 60 (38.5%). The patients were divided into 4 groups: a) 47 (30.1%) no WRF/low UNa (UNa \leq 109 mEq/L); b) 49 (31.4%) no WRF/high UNa (UNa $>$ 109 mEq/L); c) 31 (19.9%) WRF/low UNa and d) 29 (18.6%) WRF/high UNa. The parameters of the WRF/low UNa group showed higher clinical severity and worse diuretic and decongestive response. The development of WRF was associated with a higher risk of the combined event (HR, 1.88; 95%CI, 1.01-3.50; P=.046). When stratified by natriuretic response, WRF was associated with an increased risk of adverse events in patients with low natriuresis (HR, 2.28; 95%CI, 1.15-4.53; P=.019), but not in those with high natriuresis (HR, 1.18; 95%CI, 0.26-5.29; P=.826).

Natriuresis could be a useful biomarker for interpreting and prognosticating WRF in AHF. WRF is associated with a higher risk of adverse events only in the context of low natriuresis.