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Effect of Low-sodium Diet in Patients with Heart Failure with Worsening Renal Function During Hospitalization

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Objectives : Dietary sodium restriction is recommended for general cardiovascular health, but the evidence on the benefits in patients with heart failure (HF) is inconclusive. However, patients who experience worsening renal function (WRF) during hospitalization for HF may be more susceptible to volume overload. We investigated the prognostic impact of sodium restriction in patients hospitalized with HF focusing on WRF.

Methods : This retrospective study analyzed patients hospitalized with diagnosis of HF from 2010 to 2019. WRF was defined as 20% or greater decrease in estimated glomerular filtration rate. Low-sodium diet was estimated based on the last prescription before discharge. The primary outcome was all-cause mortality.

Results : Among the 681 patients, 342 (50.2%) developed WRF and 230 (33.8%) consumed low-sodium diet. There was no difference in the proportion of low-sodium diet between the WRF and no-WRF groups (35.4 vs. 32.2%; $p=0.418$). During median 44.8 weeks of follow-up (IQR 15.2–71.6), 18.8% of patients died. Low-sodium diet was tended to be associated with lower mortality, but not statistically significant (HR 0.696 [0.470–1.031], $p=0.071$). Comparing mortality according to the low-sodium diet in the WRF and no-WRF groups, low-sodium diet was not associated with mortality in the both groups (WRF group HR 0.721 [0.443–1.172], $p=0.187$; no-WRF group HR 0.604 [0.308–1.182], $p=0.141$). Excluding patients died within 12 weeks after discharge, low-sodium diet was associated with lower mortality (HR 0.589 [0.361–0.962], $p=0.034$). Excluding early death, low-sodium diet was not associated with mortality in the no-WRF group (HR 0.634 [0.287–1.401] $p=0.260$) but was marginally significantly associated in the WRF group (HR 0.537 [0.288–1.002] $p=0.051$).

Conclusions : Low-sodium diet may be beneficial for patient with HF requiring hospitalization, especially those who experience WRF during hospitalization. Early mortality after discharge seems to be driven by the underlying conditions than by the low-sodium diet.