

Short-term effects of low-dose tolvaptan in acute decompensated heart failure patients with severe aortic stenosis: the LOHAS registry

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Background: Tolvaptan exerts potent diuretic effects in heart failure patients without hemodynamic instability. Nonetheless, its clinical efficacy for acute decompensated heart failure (ADHF) due to severe aortic stenosis (AS) remains unclear. This study aimed to evaluate the short-term effects of tolvaptan in ADHF patients with severe AS.

Methods: The LOw-Dose Tolvaptan (7.5 mg) in Decompensated Heart Failure Patients with Severe Aortic Stenosis (LOHAS) registry is a multicenter (7 centers) prospective registry that assessed the short-term effects of tolvaptan in subjects hospitalized for ADHF with severe AS. A total of 59 subjects were enrolled between September 2014 and December 2017. The primary endpoints were changes in body weight and fluid balance measured daily from baseline up to 4 days.

Results: The median [interquartile range] patient age and aortic valve area were 85.0 [81.0–89.0] years and 0.58 [0.42–0.74] cm², respectively. Body weight continuously decreased, and fluid balance was maintained from baseline to day 4 ($p < 0.001$, $p = 0.194$, respectively). Median serum B-type natriuretic peptide concentration significantly decreased from 910.5 to 740.0 pg/mL by day 4 ($p = 0.002$). However, systolic blood pressure and heart rate were non-significantly changed ($p = 0.250$, $p = 0.656$, respectively). Hyponatremia (> 150 mEq/L) and worsening renal function occurred in 2 (3.4%) and 4 (6.8%) patients, respectively.

Conclusions: Short-term treatment with low-dose tolvaptan is safe and effective, providing stable hemodynamic parameters in patients with ADHF and severe AS.