Clinical safety and efficacy of tolvaptan for acute phase therapy in patients with low-flow severe aortic stenosis

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Topic(s):
Acute Heart Failure: Pharmacotherapy

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Background: Conventional diuretic therapy for low-flow (LF) severe aortic stenosis (SAS) often has an inadequate effect or causes hemodynamic instability. Tolvaptan is used for acute heart failure in addition to conventional diuretics in Japan, and it does not cause intravascular dehydration.

Purpose: This study aimed to retrospectively investigate the safety and efficacy of tolvaptan in the acute phase patients with SAS and compared LF-SAS with normal-flow (NF) SAS.

Methods: 56 consecutive SAS patients are analyzed. The primary endpoints were adverse clinical events (death, worsening heart failure, worsening renal failure, fatal arrhythmia, cardiogenic or hypovolemic shock, and use of inotropic agents) and the volume of urine and fluid balance within 48 hours of tolvaptan administration (Figure).

Results: Among 56 patients, 16 had LF-SAS (29%), and 40 had NF-SAS (71%). Severe adverse clinical events were not observed 48 hours after tolvaptan administration. In both groups, the urine volume significantly increased after tolvaptan administration in comparison to 24 hours before tolvaptan administration (both, \( p<0.01 \)). There were no changes in the urine volume during the initial 24 and 48 hours. In the LF-SAS group, tolvaptan resulted in a significant decrease in fluid balance during the initial 24 and 48 hours compared to 24 hours before tolvaptan administration (\( p<0.05 \)).

Conclusion: Adding tolvaptan to conventional treatment leads to an increase in urine output and a decreased fluid balance without hemodynamic instability in patients with LF-SAS.
Abstract:
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