Abstract: **P1110**

**Hazardous effects of widespread inotrope use in acute heart failure patients**

**Authors:**
HJ Cho¹, JH Kang¹, HY Lee¹, BH Oh¹, ¹Seoul National University Hospital, Department of Internal Medicine - Seoul - Korea (Republic of),

**On behalf:** Korean Acute Heart Failure (KorAHF) registry

**Topic(s):**
Acute Heart Failure – Epidemiology, Prognosis, Outcome

**Citation:**
Background: The majority of acute heart failure (HF) patients are treated with diuretics to optimize volume status and vasodilators for symptom resolution and congestion relief. Inotropes can be administered in patients with hypotension or signs and symptoms of peripheral hypo-perfusion. Current guidelines recommend that inotropes should not be used in patients with normal systolic blood pressure. However, inotropes are widely applied in the real world.

Purpose: We aimed to evaluate the effect of inotropes in acute HF patients from a nationwide Korean Acute Heart Failure (KorAHF) registry.

Methods and Results: A total of 5625 patients were analyzed. Those with isolated right HF (154 patients, 2.7%) were excluded, leaving 1703 (31.1%) patients who received inotropes during admission and 3768 (68.6%) patients who did not receive inotropes. The majority of inotrope users was normal SBP (=90 mmHg, 1478 patients, 86% of users) at the initial point. The primary outcomes were in-hospital adverse events and post-discharge 1-month mortality. Inotrope users had a higher event rate than non-users (in-hospital adverse events: 13.3% vs 1.4%, p<0.001; 1-month mortality: 5.5% vs 2.5%, p=0.001), while inotrope use was an independent predictor for clinical outcomes (in-hospital adverse events: ORadjusted 5.459, 95% CI 3.622–8.227, p<0.001; 1-month mortality: HRadjusted 1.839, 95% CI 1.227–2.757, p=0.003). Subgroup analysis showed that inotrope use was an independent predictor for detrimental outcomes in patients with normal initial SBP (in-hospital adverse events: ORadjusted 5.931, 95% CI 3.864–9.104, p<0.001; 1-month mortality: HRadjusted 3.584, 95% CI 1.280–10.037, p=0.015). For patients with a low initial SBP, inotrope use was not a risk factor for adverse outcomes (in-hospital adverse clinical outcome: ORadjusted 0.575, 95% CI 0.013–25.167, p=0.730; post-discharge 1-month mortality: HRadjusted 1.714, 95% CI 0.372–7.893, p=0.489). Because of the distinct baseline characteristics among inotrope users and non-users, we performed two different methods to compensate for the differences; the propensity score matching (PSM) method and the IPW Cox proportional hazards regression model. The matched populations showed consistent results.

Conclusion: Inotropes are still widely used, even in acute HF patients presenting with a normal blood pressure. We have demonstrated the hazardous effects of inotrope use in acute HF patients. The infusion of inotropes is strongly associated with in-hospital adverse outcomes and 1-month follow-up mortalities. Clinicians should be cautious with the usage of inotropes in acute heart failure patients, especially in those with a normal blood pressure.
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