

16.4.1 - Pharmacotherapy

Effect of adding hydrochlorothiazide to usual treatment of patients with acute decompensated heart failure: a randomized clinical trial

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Funding Acknowledgements: Type of funding sources: None.

Introduction: Acute decompensated heart failure (ADHF) is the leading cause of hospitalization in patients aged 65 years or older, and most of them present with congestion. The use of hydrochlorothiazide (HCTZ) may increase the response to loop diuretics. Objective: To evaluate the effect of adding HCTZ to furosemide on congestion and symptoms in patients with ADHF. Methods: This randomized clinical trial compared HCTZ 50 mg versus placebo for 3 days in patients with ADHF and signs of congestion. The primary outcome of the study was daily weight reduction. Secondary outcomes were change in creatinine, need for vasoactive drugs, change in natriuretic peptides, congestion score, dyspnea, thirst, and length of stay. Results: Fifty-one patients were randomized — 26 to the HCTZ group and 25 to the placebo group. There was a trend towards additional weight reduction in the HCTZ group (HCTZ: -1.78 ± 1.08 kg/day vs placebo: -1.05 ± 1.51 kg/day; $p = 0.062$). In post hoc analysis, the HCTZ group demonstrated significant weight reduction for every 40 mg of intravenous furosemide (HCTZ: -0.74 ± 0.47 kg/40 mg vs placebo: -0.33 ± 0.80 kg/40 mg; $p = 0.032$) - figure. There was a trend to increase in creatinine in the HCTZ group (HCTZ: 0.50 ± 0.37 vs placebo: 0.27 ± 0.40 ; $p = 0.05$) but no significant difference in onset of acute renal failure (HCTZ: 58% vs placebo: 41%; $p = 0.38$). No differences were found in the remaining outcomes - table. Conclusion: There was a trend towards greater daily weight reduction in the HCTZ group. In analysis adjusted to the dose of intravenous furosemide, adding HCTZ 50 mg to furosemide resulted in a synergistic effect on weight loss.

Study outcomes

Outcome	HCTZ	Placebo	p-value
Primary			
Weight change/day	-1.78 ± 1.08	-1.05 ± 1.51	0.062
Secondary			
Length of stay (days)	9 ± 8	8 ± 9	0.37
Change in creatinine (mg/dL)	0.50 ± 0.37	0.27 ± 0.40	0.05
Need for vasoactive drugs (%)	19.2	12.0	0.70
Congestion score	-5.4 ± 4.6	-4.8 ± 4.6	0.68
Change in dyspnea scale	-4.7 ± 2.7	-3.2 ± 3.6	0.14
Thirst scale	-1.7 ± 4.5	0.5 ± 3.8	0.21
Change in natriuretic peptides (%)	-11.1 ± 100.3	-33.3 ± 50.9	0.83

Plus–minus values are means \pm standard deviation.

Abstract Figure. Diuretic response

