Hyperuricaemia treatment in acute heart failure patients does not improve their long-term prognosis: a propensity score matched analysis from the AHEAD registry

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On behalf: Great Network

Topic(s):
Acute Heart Failure: Pharmacotherapy

Citation:
Funding Acknowledgements:
Ministry of Health CZ 65269705 and MUNI/A/1250/2017

Background
Hyperuricaemia is associated with a poorer prognosis in heart failure (HF) patients. Benefits of hyperuricaemia treatment with allopurinol have not yet been confirmed in clinical practice. The aim of our work was to assess the benefit of allopurinol treatment in a large cohort of HF patients.

Methods and Results
The prospective acute heart failure registry (AHEAD) was used to select 3,160 hospitalized patients with a known level of uric acid (UA) who were discharged in a stable condition. Hyperuricaemia was defined as UA =500µmol/l and/or allopurinol treatment at admission. The patients were classified into three groups: without hyperuricaemia, with treated hyperuricaemia and with untreated hyperuricaemia at discharge. Two- and five-year all-cause mortality were defined as endpoints. Patients without hyperuricaemia, unlike those with hyperuricaemia, had a higher left ventricular ejection fraction, a better renal function and higher haemoglobin levels, had less frequently diabetes mellitus and atrial fibrillation, and showed better tolerance to treatment with ACEIs/ARBs and/or beta-blockers. In a primary analysis, the patients without hyperuricaemia had the highest survival rate. After using the propensity score to set up comparable groups, the patients without hyperuricaemia had a similar five-year survival rate as those with untreated hyperuricaemia (42.0% vs 39.7%, p=0.362) whereas those with treated hyperuricaemia had a poorer prognosis (32.4% survival rate; p=0.006 vs non-hyperuricaemia group and p=0.073 vs untreated group).

Conclusion
Hyperuricaemia was associated with an unfavourable cardiovascular risk profile in HF patients. Treatment of hyperuricaemia with low doses of allopurinol did not improve the long-term prognosis of HF patients.