Abstract: P745

Use of levosimendan in acute decompensated anthracycline-induced cardiomyopathy

Authors:
KFC Li¹, KH Mok¹, YW Chia¹, Tan Tock Seng Hospital, Cardiology - Singapore - Singapore,

Topic(s):
Acute Heart Failure: Pharmacotherapy

Citation:

Introduction
Anthracycline chemotherapy induces cardiomyopathy in a dose-related fashion with no specific treatment, except with standard heart failure medical therapy. We describe a patient with acute decompensated heart failure from anthracycline-induced cardiomyopathy, who improved after Levosimendan infusion.

Case presentation
Our patient is a 58-year-old gentleman, underwent chemotherapy for diffuse large B-cell lymphoma with a cumulative Doxorubicin dose of 770 mg. He has hypertension, diabetes and a normal baseline left ventricular ejection fraction (LVEF) >55%. Repeat transthoracic echocardiography (TTE) after completion of chemotherapy for exertional dyspnoea revealed LVEF drop to 35% with global hypokinesia and no valvulopathies. Dipyridamole stress myocardial perfusion imaging showed a medium-sized inferior wall partial thickness infarct with mild ischemia, disproportionate to the degree of cardiomyopathy, suggesting predominantly a non-ischemic cause.

Patient subsequently deteriorated from MRSA pneumonia requiring mechanical ventilation, complicated by episodes of supraventricular tachyarrhythmias aborted with Adenosine. Use of low dose Bisoprolol resulted in transient hypotension requiring Norepinephrine support and trial of Amiodarone could not be continued because of worsening transaminitis. Repeat TTE indicated a drop in LVEF to <20% with severe functional mitral regurgitation while a coronary angiogram revealed only moderate triple vessel disease. HEART team was consulted and felt that his cardiomyopathy is likely anthracycline-induced and hence did not recommend coronary intervention.

Due to worsening heart failure and hypotension (wet and cold profile), he was admitted to the Cardiac ICU for hemodynamic-tailored therapy. Initial central venous oxygen saturation (ScvO2) was <50%, indicating severe oxygen delivery/consumption mismatch, with a cardiac index, estimated using pulse contour analysis, of only 1.2 L/min/m2. Intravenous Furosemide and Levosimendan infusion, at 0.1 mcg/kg/min, was started and stroke volume index improved significantly from 26 to 31 ml/beat/m2 with a resultant ScvO2 of 75%, indicating significant improvement in systemic oxygen delivery from the improved cardiac output. His blood pressure also improved subsequently with no further tachyarrhythmias. Eventually, patient was discharged well on Aspirin, Atorvastatin, Captopril, Ivabradine and Digoxin. A subsequent TTE 2 months later showed increment of LVEF to 30%, together with improvement of NYHA functional status from Class IV to II.

Conclusion
Anthracycline-induced cardiomyopathy is associated with poor prognosis and treatment options are limited. To the best of the author’s knowledge, there are only few case reports on use of Levosimendan for this condition. In our patient, Levosimendan proved to be effective and safe in the treatment of acute decompensated anthracycline-induced heart failure, with improvement in symptoms and cardiac output.