Takotsubo cardiomyopathy: issues for the intensivist

Editor—We echo the caution advised by Dr Redmond and colleagues in using sympathomimetics to address hypotension secondary to Takotsubo cardiomyopathy and propose mechanical circulatory support as an alternative in this condition. This suggestion stems from our treatment of a 67-year-old woman with subarachnoid haemorrhage and hypotension refractory to catecholamines, who was referred to the National Advanced Heart Failure Service at our hospital. She too had no evidence of coronary artery disease at angiography despite a moderate troponin increase. Left ventriculography demonstrated apical ballooning in systole and hyperkinesis of the basal segments consistent with Takotsubo cardiomyopathy. The left ventricular ejection fraction was estimated at 20% and an intra-aortic balloon pump was inserted. This enabled catecholamine infusions to be steadily weaned and discontinued within 36 h. Myocardial function recovered sufficiently to allow the removal of the balloon pump after 5 days. While acknowledging the paucity of evidence at this time, we feel that such use of mechanical circulatory support is a sensible approach in Takotsubo cardiomyopathy given the putative pathogenic role of catecholamines in this condition.

We also wish to draw attention to the study by Park and colleagues assessing the incidence of Takotsubo cardiomyopathy in medical ICU patients. They performed serial echocardiography in 92 patients with a non-cardiac diagnosis and identified left ventricular apical ballooning in 26 (28%). Left ventricular function normalized in 20 of these 26 patients but still the presence of apical ballooning predicted lower 2-month survival. It is possible, therefore, that Takotsubo cardiomyopathy is neither uncommon nor unimportant amongst ‘stressed’ ICU patients. Moreover, as previously mentioned, standard treatment of hypotension may be counterproductive. Hence it would seem prudent to retain an index of suspicion and image the myocardium when hypotension proves relatively resistant to catecholamines. This provides further justification for the expansion of training in and use of echocardiography in ICU.

Use of recombinant human deoxyribonuclease for the treatment of acute asthma

Editor—We would like to thank Dr Sellers for the recently published asthma review. We would like to add to this comprehensive review by highlighting the potential use of recombinant human deoxyribonuclease (rhDNase) as an additional treatment for acute severe near-fatal asthma unresponsive to conventional therapy. It has been observed that patients who have died from severe asthma have marked widespread mucus plugging of the airways. rhDNase is an enzyme that catalyses hydrolysis of extracellular deoxyribonucleic acid found in respiratory secretions, thereby reducing the viscosity of mucus plugs, improving expectoration, ciliary clearance, and overall airway obstruction. It is currently licensed for use in cystic fibrosis where it is administered by inhalation using a jet nebulizer. British guidelines on the management of asthma do not support the routine use of rhDNase or mucolytics for the treatment of severe acute asthma. There are however case reports, in paediatric and adult patients, suggesting its efficacy in mechanically ventilated patients with status asthmaticus unresponsive to conventional treatment. In each of these cases, there was an observed rapid improvement in oxygenation and reduced ventilatory pressures after rhDNase administration.

Administration by both direct instillation via bronchoscope and nebulizer therapy has been described and is well tolerated with minimal side-effects although blood streaking of sputum has been noted. Nebulizer therapy in non-intubated patients may have a role but requires further investigation. Two randomized studies including 171 patients showed no clinical improvement among moderate asthmatics refractory to standardized care; however, FEV1 measurements increased in the most severely affected.

In summary, we would suggest rhDNase should be considered as a potential therapy for refractory treatment of intubated patients with status asthmaticus in the near-fatal setting.

Declaration of interest

None declared.

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