2022

Hex of the Dex: Dexmedetomidine Induced Malignant Hyperthermia in Myotonic Dystrophy

K Almerico
Beaumont Health Fellow

T Salimnia
Beaumont Health Fellow

S Dogra
Beaumont Health

Hex of the Dex: Dexmedetomidine Induced Malignant Hyperthermia in Myotonic Dystrophy

K. Almerico[1], T. Salimnia[2], S. Dogra[3]; [1]Pulmonary & Critical Care Medicine, Beaumont Health, Royal Oak, MI, United States, [2]Pulmonary and Critical Care, Beaumont Health, Royal Oak, MI, United States, [3]Pulmonary & Critical Care, Beaumont Health, Royal Oak, MI, United States.

Dexmedetomidine is an alpha$_2$ agonist that has been shown to have anxiolytic, analgesic, and sedative properties making it a popular medication in the intensive care unit. Over the years, its use has become more widespread. Thus, there have been more adverse events, most notably hypotension and bradycardia. Over the past few years the side effect of hyperthermia has grown to recognition with various case reports being documented. We report a case of dexmedetomidine induced malignant hyperthermia (MH) up to 42.2 degrees Celsius in a patient with underlying myotonic dystrophy that resolved within 24 hours of discontinuing the medication.The patient is a 40-year-old female with a past medical history of morbid obesity and myotonic dystrophy (DM1) who presented with shortness of breath. She was found to have pneumonia, fluid overload, and have a presumed diagnosis of obesity hypoventilation syndrome and COPD. She was treated conservatively with antibiotics, high-flow nasal cannula oxygen with intermittent noninvasive ventilation, however, on day 3 she decompensated and was intubated; she was started on fentanyl and propofol at that time. She slowly improved and on day 4 of intubation dexmedetomidine was initiated to help titrate off propofol and prepare the patient for extubation. The following day, approximately 24 hours after initiation of dexmedetomidine, the patient started to develop a fever that rose to 42.2 degrees celsius. Dexmedetomidine was discontinued. Acetaminophen and external cooling mechanisms with ice packs and cold intravenous fluids were given, however despite these interventions she exhibited resistant hyperthermia and was given a dose of dantrolene and placed on a non-invasive targeted temperature management system, the Arctic Sun, what is typically used for targeted temperature management post cardiac arrest. The patient defervesced without recurrence. Fever induced by dexmedetomidine is known as a rare complication but should be one to be aware of especially with the increased use of this medication. Given the long list of etiologies for fever in the intensive care unit, usually multiple interventions are done simultaneously making it difficult to ascertain which intervention helped the most. What makes this case unique is the fact it took place in a patient with myotonic dystrophy, begging the question if there is a link between DM1 and MH. The temporal relationship of hyperthermia to initiation of dexmedetomidine in out patient seemed more than coincidental and had a strong correlation with the abrupt presence and resolution of hyperthermia in relation to dexmedetomidine.

This abstract is funded by: none