

Dantrolene Administration After an MH Event

Developed in 2017

Topic

Following treatment of acute MH, how much dantrolene should be administered and for how long? What criteria should be used to determine stopping treatment with dantrolene?

Recommendations

- After initial bolus dosing to treat the acute MH crisis, maintenance dantrolene should be continued 1 mg/kg/dose every 4-6 hours while monitoring the patient for signs of recrudescence. The hotline consultants agreed that no evidence exists to refute or change the current guidelines that continue this maintenance regimen until the above criteria are met. Current evidence does not suggest that administering the maintenance dose as a bolus or infusion is superior. Bolus administration may serve to remind clinicians to evaluate the patient at regular intervals. The package insert for dantrolene indicates that it should be used within 6 hours of reconstitution; bolus dosing may make compliance with this directive easier.

Supporting Evidence

Background:

Following initial successful treatment of acute MH, MHAUS currently recommends continuing dantrolene therapy for at least 24 hours and sometimes longer as clinically indicated. We recommend that dantrolene can be stopped, or the interval between doses increased to every 8 hours or every 12 hours if all of the following criteria are met: metabolic stability for 24 hours, core temperature less than 38°C, CK continues to decrease, no evidence of ongoing myoglobinuria, and muscle rigidity has abated. The hotline consultants discussed these criteria and searched for evidence that they should change or remain the same.

Discussion:

The most pertinent published data in this area are concerned with the possibility of recrudescence – the recurrence of MH signs after successful initial treatment of the acute event.¹ Recrudescence of MH occurred in 20% of 308 patients examined. Half of the patients showed signs or symptoms of recrudescence within 9 h of the initial event (median time 8.7 h), and 80% did so within 16 h. Signs included muscle rigidity, evidence of increasing rhabdomyolysis, respiratory acidosis, and hyperthermia.

References

1. Burkman JM, Posner KL, Domino KB. Analysis of the clinical variables associated with recrudescence after malignant hyperthermia reactions. *Anesthesiology*. 2007;106:901-906.