

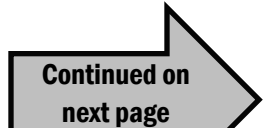
MALIGNANT HYPERTHERMIA CRISIS RESPONSE

By Stanford Anesthesia Cognitive Aid Group and Henry Rosenberg, MD

SIGNS	EARLY: 1. Increased ETCO ₂ 2. Tachycardia 3. Tachypnea 4. Mixed Acidosis (ABG) 5. Masseter spasm/ trismus 6. Sudden cardiac arrest in young person due to hyperkalemia	May be LATER: 1. Hyperthermia 2. Muscle rigidity 3. Myoglobinuria 4. Cardiac Arrest
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CALL FOR HELP	CALL FOR MH CART
INFORM THE TEAM	
START MIXING DANTROLENE	

DDX	<ul style="list-style-type: none"> - Light anaesthesia - Hypoventilation - Over-heating (external) - Thyroid storm - Pheochromocytoma - Hypoxemia - Insufflation of CO₂
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MALIGNANT HYPERTHERMIA CRISIS RESPONSE continued

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TREATMENT

1. Discontinue anesthetic triggers (volatiles and succinylcholine) and increase fresh gas flow to 15 L/min. Do NOT change machine or circuit
2. Halt procedure. If emergent, continue with non-triggering anesthetic
3. Hyperventilate, FiO₂ 100%, high flow O₂
4. Assign several people to prepare 2.5 mg/kg IV Dantrolene bolus. Dilute each 20 mg Dantrolene vial in 60 mL preservative-free sterile water (for 70kg person give 175 mg so prepare 9 vials of 20 mg Dantrolene each as above)
5. Rapidly administer Dantrolene. Continue giving until patient stable (may give up to 10 mg/kg)
6. Administer sodium bicarbonate 1-2 mEq/kg for metabolic acidosis/hyperkalemia
7. Actively **cool patient** with ice packs, lavage if open abdomen. Stop cooling at 38°C
8. Arrhythmias are usually secondary to Hyperkalemia – **Go to ACLS algorithms as needed**
9. **Treat hyperkalemia with:**
 - Calcium Gluconate** 3 g IV (or Calcium Chloride 1 gm IV)
 - D50** 1 Amp (25g Dextrose) + **Regular Insulin** 10 units IV (monitor glucose)
 - Sodium Bicarbonate** 1 Ampule
 - *Avoid calcium channel blockers**
10. Send **labs** for ABG, CPK, myoglobin, PT/PTT, and lactic acid
11. Place foley catheter. Monitor urine output. Goal 2cc/kg per hour urine output. Can give IV fluid and diuretics
12. Arrange ICU bed. Mechanical ventilation usually required.
13. Continue Dantrolene 1 mg/kg every 4-6 hours for 24-36 hours, observe closely 24 hours. Call MH hotline with questions.

Contact the Malignant Hyperthermia Association of the United States (**MHAUS hotline**) at any time for consultation if MH is suspected:

1-800-MH-HYPER (**1-800-644-9737**) or online at <http://www.mhaus.org/>