**Malignant Hyperthermia (MH)**

This practice algorithm has been specifically developed for MD Anderson using a multidisciplinary approach and taking into consideration circumstances particular to MD Anderson, including the following: MD Anderson’s specific patient population; MD Anderson’s services and structure; and MD Anderson’s clinical information. Moreover, this algorithm is not intended to replace the independent medical or professional judgment of physicians or other health care providers. This algorithm should not be used to treat pregnant women.

### INITIAL EVALUATION

**Assess signs and symptoms of MH:**

**Early signs and symptoms:**
1. Tachycardia/Tachypnea
2. Abrupt increase in ETCO2
3. Masseter muscle rigidity
4. Hyperthermia (temperature greater than 38.8°C)
5. Metabolic-respiratory acidosis
6. Hyperkalemia
7. Hypotension
8. Rhabdomyolysis/muscle pain
9. Cardiac arrhythmias
10. Hypoxia
11. Profuse sweating
12. Mottling of the skin
13. Unstable arterial pressure

**Late signs and symptoms:**
1. Acute renal/circulatory failure
2. Dark colored urine due to myoglobinuria
3. Disseminated intravascular coagulation
4. Elevated blood creatinine phosphokinase levels/blood myoglobin levels
5. Rhabdomyolysis/muscle pain
6. Hyperkalemia
7. Hyperthermia (temperature greater than 38.8°C)
8. Hypotension
9. Cardiac arrhythmias

### ACUTE PHASE

**MH team lead (anesthesia) assembles crisis team**
- Assigns MH roles
- Assists with drawing arterial blood gases (ABG) as needed

**Cooling team member**
- Start cooling process only if patient’s temperature exceeds 39°C (102.2°F)
- Brings cold saline and ice, packs saline IV bags in ice for infusion
- Prepares ice packs
- **Surface cooling measures:**
  - Ice packs to body surfaces
  - Cooling blankets, sets temperature at 32°C if available
- **Internal cooling measures:**
  - Nasogastric tube for cold saline stomach lavage
  - Indwelling Foley catheter for cold saline irrigation
- Continuously monitors patient’s temperature
- Discontinue cooling measures when temperature decreases to 38°C (100°F)

**Dantrolene team member**
- Calculate patient’s weight in kg
- Administers dantrolene 2.5 mg/kg IV; continuously repeat dose until symptoms subside or a cumulative dose of 10 mg/kg is reached

**Medication team member**
- Assist with mixing dantrolene
- Administers dantrolene 2.5 mg/kg
- Mix and administer other medications
- Repeat until signs of MH are reversed as requested per anesthesia

**Primary care nurse**
- Maintain documentation of all drugs given, procedures done, and patient continued assessment
- Infuse cold intravenously saline
- Insert NG tube for iced saline lavage
- Assist MH team leader
- Labs; blood gases, electrolytes, creatine kinase, myoglobin, coagulation studies, additional labs

**Anesthesia**
- **Anesthesia control room**
  713-792-2524 (M-F 6 am - 9 pm)
- **Anesthesia airway pager**
  713-404-1515 (after hours and weekends)
- **ACB Anesthesia**
  713-834-6520

**MH cart locations:**
- **Main building:**
  - Main OR
  - G5 PACU
  - P3.3028
- **Mays building:**
  - ACB PACU room ACB 4.1951
  - Anesthesia storage room ACB 4.2517
- **Proton center:**
  - PTCB 2075 (kit above crash cart)

- **Transfer patient to higher level of care**
- **Follow up with safety intelligence (SI) report**
- **Report to Malignant Hyperthermia Association of the United States (MHAUS)**
- **MH hotline 800-644-9737**
- Patient education regarding MH and future precautions.
- **Ongoing evaluation for signs and symptoms of MH (see box A)**

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*Approved by the Executive Committee of the Medical Staff on 08/30/2016*
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Malignant Hyperthermia (MH)

SUGGESTED READINGS


Malignant Hyperthermia (MH)

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DEVELOPMENT CREDITS

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