

PROTOCOL FOR: Malignant Hyperthermia (MH): Perioperative Care of Patients with

- POLICY:**
1. All patients undergoing anesthetic procedures will be assessed preoperatively for risk of MH, by nursing and/or anesthesiology staff. This assessment will include personal or family history of anesthetic-related problems and muscular abnormalities such as ptosis, squinting or hypermobility of joints.
 2. The JDH MH boxes (2) will be secured in the OR Medication Room and will be checked regularly for outdates. The FSC MH cart will be stored in the OR hallway.
 3. Patients known or suspected to be at risk for MH will be scheduled for the first care of the day.
 4. Patients known or suspected to be at risk for MH will receive anesthesia via a thoroughly cleaned machine with fresh soda lime.

**DESIRED PATIENT
OUTCOMES:**

1. The patient will experience minimal to no problems related to MH.
2. The patient will receive appropriate prescribed medications, administered safely and as needed.

**CLINICAL
ASSESSMENT AND**

CARE: Preoperatively

1. Elicit information from patient and family regarding history of anesthetic problems; report any problems to anesthesiology staff.
2. Report any muscular abnormalities such as ptosis, squinting or hypermobility of joints to anesthesiology staff.
3. Communicate with OR schedulers or OR charge nurse any known or suspected risk for MH so appropriate care preparation can be made.

Intraoperatively

1. Assess for signs and symptoms of MH from induction onward:
 - Unexplained tachypnea
 - Unexplained muscle rigidity
 - ↑ end expired CO₂
 - Unstable systolic BP
 - Cardiac arrhythmias
 - Tachypnea in absence of paralysis
 - Rapid rise in body temperature
 - Darkened blood at surgical field
2. If signs and symptoms of MH occur, assist in:
 - a. Completion of surgery and discontinuation of anesthetics
 - b. Processing specimens, especially for ABGs and chemistry, using IStat

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c. Cooling patient

- Place plastic sheets around patient to aid in packing ice around the body; place patient on cooling blanket, if possible;
- Provide cold solutions to pour into the peritoneal cavity, if open; cold saline lavage per nasogastric tube and rectum, as needed;
- Cease cooling measures when patient's temperature reaches about 39°C to prevent hypothermia.

d. Restoring acid-base balance

e. Administration of medications to treat dysrhythmias as well to interrupt skeletal muscle contractions

f. Reconstitution and administration of Dantrolene, using propofol spikes and 60ml luer lock syringes.

g. Placement of invasive monitoring lines, as indicated

Postoperative

1. Continue observation for 24 hours after the onset of the MH crisis, with particular attention given to the patient's temperature and urine output and to blood coagulation studies. Provide report to ICU when patient is stable enough to be transferred from perioperative area (OR or PACU)
2. Reconstitute and administer Dantrolene, as ordered, for up to 24 hours.
3. Observe for other MH complications such as pulmonary edema, acute renal failure, coagulopathy, acidosis, myocardial depression, cerebral vascular accident and/or cerebral edema.
4. Assess skin integrity regularly due to increased risk of skin breakdown from cooling blankets and the skin moisture from diaphoresis and alcohol baths.
5. Continue to observe all body systems to note return of proper function, absence of neurologic deficit and/or bleeding. Any changes, however subtle, must be reported.
6. Provide extensive emotional support and teaching related to MH to patient and family once patient is stabilized.
7. Educate the patient and family concerning risks during future anesthesia or periods of strong emotional stress once the patient is stabilized.

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 6/03

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REVISION DATES: 8/07, 2/08, 11/08