Parturient with MHS Partner

Suggested Guidelines for management of the Pregnant-patient not believed to be at risk for MH, but WHOSE PARTNER is susceptible to malignant hyperthermia.

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The question of the best anesthetic management for labor and delivery of a parturient who is not MH susceptible but whose partner is believed to be MH susceptible is largely theoretic since there are no human or animal clinical studies related to this situation. There are also no cases reported of a fetus of such parents developing a peripartum MH crisis. Nevertheless, since this situation does occur with some frequency, the following are suggested guidelines for anesthetic management.

PRIOR TO DELIVERY:

If at all possible, the father's MH susceptibility should be confirmed by review of medical records. If a genetic test has been done and a known causative mutation found, that mutation can be sought in the fetus prior to delivery (chorionic villus sampling or amniocentesis). However, this course is not recommended by most MH experts at the present time unless the procedures are being undertaken for other reasons. Consultation with the local anesthesiologist and an MH expert, e.g., MH biopsy center director, MH hotline consultant or member of the MHAUS Professional Advisory Council is recommended prior to delivery.

Anesthetic management of a non-MH susceptible woman carrying a potential MH-susceptible FETUS FOR surgery during pregnancy:

If the pregnant woman requires non-emergent surgery at any point in the pregnancy, a non-triggering anesthetic should be employed, such as local, nerve block or epidural or spinal anesthesia as long as it is accomplished in a timely manner. If a general anesthetic is indicated, a total intravenous anesthetic is recommended, although nitrous oxide may be used with an anesthesia machine that has been prepared for an MH susceptible patient. Standard ASA mandated monitoring should be used, along with core temperature monitoring. Fetal monitoring should follow standard guidelines. Dantrolene should not be administered in preparation for surgery, labor and delivery.

LABOR AND DELIVERY:

The labor and delivery should be conducted at a site that follows the American Society of Anesthesiologist's Practice Guidelines for Obstetric Anesthesia.

The anesthesia providers should be notified of the arrival of the patient on the Labor and Delivery Unit as soon as she is admitted.

Until the delivery of the fetus, the mother should be treated as MHS, thus avoiding MH triggering agents. All other drugs and techniques may be used as in any pregnant patient with no special modification based on MH status.

Continuous epidural analgesia is highly recommended for labor and delivery.

If a Cesarean delivery is indicated in a patient who does not have an epidural catheter in place, neuraxial (spinal, epidural, or combined spinal-epidural) anesthesia is recommended, if not otherwise contraindicated.

If a general anesthetic is indicated, a non-triggering anesthetic technique should be employed, e.g., TIVA, although nitrous oxide may be used with an anesthesia machine that has been prepared for an MH susceptible patient.

If a rapid sequence induction is needed, succinylcholine, although a known MH trigger, may be administered* since so little of the drug crosses the placental barrier. However, an appropriate intubating dose of rocuronium for rapid sequence induction may

be used in place of succinylcholine. An awake intubation is also an option. After delivery, volatile anesthetic agents may be administered to the mother. If uterine relaxation is necessary prior to delivery, nitroglycerine, 250 µg IV may be used, or NTG sublingual spray, one puff. The dose may be repeated. Another alternative is terbutaline 2.5 mg SQ.

POST DELIVERY:

Following delivery, an umbilical blood sample may be obtained for genetic analysis for MH susceptibility in those cases where the father has been shown to harbor a known MH causative mutation. In this case, the DNA diagnostic center should be contacted prior to obtaining the blood sample.

If the father is not known to harbor a known mutation, the determination of whether to obtain a blood sample for genetic analysis is complex and requires consultation with an MH hotline consultant or member of the MHAUS Professional Advisory Council.

In the absence of any medical problems, the mother and baby should be treated no differently than normal.

R*eferences*:

1. Nanson JK, Sheikh A. Anaesthesia for emergency caesarean section in a parturient with bleeding placenta praevia and a potentially malignant hyperthermia-susceptible fetus. Int J Obstet Anesth (2000) 9, 276-278.

2. Stowell K, Pollock N, Langton E. Perinatal diagnosis of malignant hyperthermia susceptibility. Anaesth Intensive Care (2007); 35 (3): 454-5.

3. Pollock NA, Langton EE. Management of malignant hyperthermia susceptible partureients. Anaesth Intensive Care (1997) 4: 398-407.

4. Girard T, Johr M, Schaefer C, Urwyler A. Perinatal diagnosis of malignant hyperthermia susceptibility. Anesthesiology (2006); 104 (6); 1353-4.

- A few MH experts do not recommend use of succinylcholine in this circumstance.