CFC Post-Operative Care Protocol for Open Fetal Surgery

Day of Surgery

IV fluids: total IV fluids restricted to 80 mL/hr.

- fluid restriction is necessary because of the risk of pulmonary edema, especially while on magnesium sulfate.

Magnesium sulfate: patient received 6 g IV load intraoperatively.

- when patient returns to room, IV rate is generally run at 4 g/hr for 1-3 hours.
- IV infusion is then generally decreased to 3 g per hour for the next 4-6 hours, and then adjusted based on uterine activity (palpable contractions, not just contractions on toco) or based on post-op magnesium level from the lab, if done.
- would anticipate the patient to be on 2 -2 1/2 g/hr by 12 hours post-op.

* magnesium sulfate infusion is continued for a total of 24 hours.

* Important issues:

- watch the pulse oximeter for signs of pulmonary edema.
- watch urine output, because magnesium levels rise as urine output falls.
- watch for signs of magnesium toxicity such as slurred speech, visual changes (blurred or double vision), respiratory depression, hypoxia, absent reflexes or cardiac arrhythmia.

VTE Prophylaxis: Strongly consider LMWH 40 mg daily (or Standard Heparin 5,000 units subcutaneously every 12 hours while in the hospital)

Indomethacin: patient receives 50 mg orally preoperatively.

- postoperatively receives 50 mg orally or per rectum every 6 hours for 3 additional dosages (total of **four** in 24 hours).

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Antibiotics: patient receives 2 g Ancef or 900 mg clindamycin (if penicillin allergic) preoperatively and second dose, if surgery exceeds 4 hours.

- postoperatively, patient receives 1 g Ancef IVPB every 8 hours (3 more doses) for a total of **four** doses in 24 hrs, or 900 mg clindamycin IVPB every 8 hours (3 more doses) for a total of **four** doses in 24 hours.

Pain management: epidural PCEA for 48 hours; leave catheter in and test upon arrival at OB Hospital. IV Tylenol 1 gram every 6 hours for four doses.

Drains: Foley catheter to dependent drainage for at least 48 hours

Surveillance: continuous toco for uterine irritability/contractions, fetal heart rate checks every four hours or continuous monitoring, if viable. Limited ultrasound to evaluate for ductal constriction and stop indomethacin, if PV or color Doppler is demonstrating signs of closure (turbulent or very high flow).

Activity: strict bedrest and bilateral lower leg compression boots.

Laboratory: CBC, Magnesium levels as clinically necessary, Comprehensive Metabolic Panel, Rhogam as necessary

Key Points:

- ❖ fluid restriction
- ❖ watch pulse oximeter O2 saturations
- ❖ watch urine output
- ❖ sequential decrease in magnesium sulfate infusion postoperatively (magnesium levels upon arrival to OB Hospital and then 6 and 12 hours later)

Commented [PB1]: When do we agree to use 2 grams??

Commented [PB2]: Do we want this here or on POD #1 to POD #2??

Commented [PB3]: Removed Calcium replacement suggestion

Post-op Day #1

IV fluids: total IV fluids restricted to 100-125 mL/hr.

- fluid restriction is necessary because of the risk of pulmonary edema in first 48 hours postoperatively.

Magnesium sulfate: magnesium sulfate is generally discontinued after a total of 24 hours, unless there are persistent palpable contractions.

Nifedipine: start oral nifedipine 60 to 90 minutes after the magnesium sulfate has been discontinued. Starting dose of nifedipine is 20 mg orally every 4 hours or 10 mg orally every 6 hours, if maternal systolic BP <95. Nifedipine dose can be increased to every 4 hours if palpable contractions are documented on the every six hours dosing. Watch for negative interaction between nifedipine and magnesium sulfate.

Indomethacin: after completing the 4 doses of 50 mg, the patient is then changed to 25 mg orally every six hours for a total of four doses in 24 hours during POD #1.

Antibiotics: antibiotics are discontinued after completing the four perioperative doses on DOS.

Commented [PB4]: Agree, technically 3 tocolytics are in use as long as Magnesium Sulfate is being excreted at variable levels. Certainly caution is warranted for oliguric patients.

Pain management: epidural PCEA

Drains: Foley catheter to dependent drainage

Surveillance: continuous toco for uterine irritability/contractions, fetal heart rate every 4 hours. Follow-up post-operative limited ultrasound for AFI and to evaluate for ductal constriction.

Diet: After noon, the patient can be offered ice chips based on degree of nausea. If the patient tolerates ice chips through the afternoon, she can be offered clear liquids in the evening and can increase oral intake *ad lib*.

Activity: strict bed rest bilateral lower leg compression boots should be continued.

Laboratory: CBC, Comprehensive metabolic panel

Key Points:

- magnesium sulfate discontinued after a total of 24 hours.
- nifedipine starts no sooner than 60-90 minutes after the magnesium is discontinued. Important to wait because cardiovascular collapse has been recorded when magnesium sulfate and nifedipine are used in combination.
- indomethacin doses change from 50mg orally or PR to 25mg orally every 6 hours.

Post-op Day #2

IV fluids: if patient tolerating clear liquids, IV converted to saline lock

Nifedipine: Nifedipine dose continues at 10-20 mg orally every 6 hours (10 mg is used, if maternal systolic BP <95). Nifedipine dose interval can be increased to every 4 hours, if palpable contractions are documented on the every 6 hours dosing. Indomethacin: after completing the four doses of 25 mg, the indomethacin is discontinued.

Pain management: epidural is discontinued and the patient is changed to oral pain medications.

Drains: Foley catheter is discontinued once the epidural catheter is removed. Surveillance: continuous toco for uterine irritability/contractions, fetal heart rate checks every shift, follow-up post-operative ultrasound evaluation as needed.

Diet: If the patient tolerates clear liquids, diet can be advanced to regular and consideration should be given to issues of bowel function (colace).

Activity: bilateral lower leg compression boots should be continued when in bed. After epidural

has been discontinued and Foley catheter removed, the patient should begin progressive mobilization and ambulation. This usually starts with sitting up in bed for several hours followed by sitting on edge of bed and dangling legs. Eventually, when ready, walking to the bathroom with assistance is initiated.

Key Points:

- watch for negative interaction between nifedipine and magnesium sulfate.
- patient should be started on oral pain medications as well as colace (100mg twice daily) as patients are very prone to constipation secondary to inactivity and pain medications.

Post-op Day #3

IV fluids: IV access heparin-locked or saline well.

Nifedipine: Nifedipine dose continues at 10-20 mg orally every 6 hours (10 mg is used, if maternal systolic BP <95). Nifedipine dose can be increased to every 4 hours, if palpable contractions are documented on the every 6 hours dosing.

Pain management: oral pain medications.

Surveillance: uterine toco for patient complaints of or nurse's assessment of irritability/contractions on exam, fetal heart rate checks every shift, follow-up post-operative ultrasound evaluation.

Diet: patient should be on regular diet by this time.

Activity: bilateral lower leg compression boots should be continued when in bed. Expectation would be the patient is walking to the bathroom without assistance by end of the

day. Patient may also shower if using a shower chair and someone should be available to assist if necessary.

Key Points:

- patients commonly experienced dizziness and palpitations during the first one to two weeks of nifedipine treatment. As such, need to be aware of this when patient begins to walk to the bathroom and during showers.
- patient should be on oral pain meds as well as colace (100mg twice daily),
- need to coordinate housing plan for next day's discharge.

Post-op Day #4

IV fluids: IV access discontinued.

Nifedipine: Nifedipine dose continues at 10-20 mg orally every 6 hours (10 mg is used, if maternal systolic BP <95). Nifedipine dose can be increased to every 4 hours, if palpable contractions are documented on the every 6 hours dosing.

Pain management: oral pain medications.

Surveillance: uterine toco prn for patient complaints only or nurse's assessment of irritability/contractions on exam, fetal heart rate checks every shift, follow-up post-operative ultrasound evaluation.

Diet: patient should be on regular diet.

Activity: Expectations are that the patient is walking to the bathroom without assistance. Patient may also shower if using a shower chair and someone is available to assist as necessary.

KeyPoints:

- anticipated day of discharge, but patient must be contraction free, on regular diet, in good pain control, ambulating without assistance, has at least passed flatus, has a normal ultrasound evaluation and has a support person and housing arranged.
- patient should be discharged with prescriptions for oral pain meds, nifedipine, a daily prenatal vitamin, as well as an iron supplement and colace (l00mg twice daily) for two weeks.
- patient needs to be scheduled for weekly follow-up ultrasound and prenatal visits.
- activity restrictions, medication schedules and signs/symptoms of postoperative complications (such as contractions, bleeding, fluid leakage, fever, wound complication and decreased fetal movements) need to be reviewed and written discharge instructions given to patient as well as where to call for answers to any questions that arise.