**Guideline for use of Methotrexate to Treat Ectopic Pregnancy**

**Purpose:** The purpose of this guideline is to provide information to facilitate consistent and appropriate use of Methotrexate for medical management of an ectopic pregnancy.

**Background:** Ectopic pregnancies account for approximately 2% of pregnancies in the United States. The incidence of ectopic pregnancy in the U.S. has risen six fold over the past 20 years. The incidence of ectopic pregnancy is higher following use of assisted reproductive technologies.

Currently, the two treatment options for ectopic pregnancy include surgical management or medical management with methotrexate. The success rate of medical treatment (approximately 90%) is comparable to that of surgery, while avoiding the potential surgical complications and those related to anesthesia, without compromising future fertility.

**Indications:**
1. Proven ectopic pregnancy based on either laparoscopy or transvaginal ultrasound revealing an unruptured ectopic pregnancy, or
2. Persistent ectopic pregnancy based on rising or plateauing hCG levels following operative laparoscopy or laparotomy for ectopic pregnancy, or
3. Presumed ectopic pregnancy based on an ultrasound that does not demonstrate an intrauterine pregnancy when the hCG level is >1500mIU/ml, no evidence of chorionic villi in a D&C specimen and stable or rising hCG levels, or abnormally rising hCG levels in the presence of strong clinical suspicion of an ectopic pregnancy.
4. Parameters for methotrexate use:
   * hemodynamically stable patient
   * patient who desires future fertility
   * unruptured tubal ectopic with a sac size ≤ 3.5cm
   * serum hCG level ≤ 10,000mIU/min
   * patient who is reliable, and able to be compliant with necessary follow up visits
   * patient who has access to prompt medical care and surgical intervention

**Contraindications:**
1. Hemodynamically unstable patient
2. Patient with severe pain or other symptoms suspicious for ruptured ectopic
3. Significant renal disease (creatinine >1.5)
4. Hepatic dysfunction (transaminases >2 times upper limit of normal)
5. Leukopenia (WBC <3000)
6. Thrombocytopenia (platelet count <150,000)
7. Significant anemia (Hgb <10)
8. Active peptic ulcer disease
9. Immunodeficiency
10. Breastfeeding
11. Known sensitivity to methotrexate
Relative Contraindications:
1. Detectable fetal heart activity
2. Ultrasound finding of a gestational sac in the adnexa measuring >3.5cm
3. hCG > or = to 10,000mIU/ml
4. Desired coexistent intrauterine pregnancy (heterotopic pregnancy)

Required Baseline Laboratory Testing:
1. Serum quantitative hCG level
2. Serum creatinine, SGOT, CBC, Blood type/Rh status

Dosage Calculations:
1. Methotrexate dose = 50 mg/m2
2. Calculate the Body Surface Area (BSA) using the patient’s measured height and weight:
   \[ BSA (m^2) = ( [\text{Height(in)} \times \text{Weight(lbs)}]/3131)^{\frac{1}{6}} \]
3. Dosage (50 mg) X BSA = Total mg dose
4. There are 50mg/2cc in the usual dilution of methotrexate. A single injection should not exceed 2cc per injection site. Most women will require more than one injection to receive the appropriate dose.
5. When given in the hospital, an order sent to the pharmacy must include the patient’s height, weight, methotrexate dose (50mg/m2), and the total dosage of methotrexate to be given to the patient based on BSA. The pharmacy will recalculate the BSA and methotrexate dosage.
6. When given in the outpatient setting, the methotrexate dosage should be calculated independently by two different licensed practitioners.

Treatment Regimen:
Day 1  Give methotrexate 50mg/m2 IM
Day 4  Measure Quantitative hCG level (it is common to see a rise in serum hCG levels from Day 1)
Day 7  Measure Quantitative hCG level
   If there has been a decline of > or = to 15% from the Day 4 level, follow serum hCG levels weekly until <5mIU/ml

OR
If there has NOT been a decline of > or = to 15% from the Day 4 level, a second dose of methotrexate 50mg/m2 IM should be given to the patient (new Day 1) and hCG levels should be measured again on Day 4 and Day 7 after the second dose. If values decline by > or = to 15%, follow serum levels weekly until <5mIU/ml.

If there is an inappropriate decline in serum hCG levels after a second dose of methotrexate, the patient should be re-evaluated and therapy either with additional methotrexate or surgical intervention is required.

Continue to next page for Patient Information and Authorization form.
Interdepartmental Policy for Communication of Imaging Findings Prior to the Administration of Methotrexate for Suspected Ectopic Pregnancy

Dear Colleagues,

At the requests of the Chairs of the Departments of Radiology and Obstetrics and Gynecology, there will be direct attending (obstetrician/gynecologist) to attending (radiologist) communication regarding the imaging findings prior to the administration of methotrexate in the case of a suspected ectopic gestation. This high standard will ensure the safe and appropriate management of these cases. This discussion should be documented in the initial radiology report or as an addendum to said report.

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