

# MFM NEWS

Department of Obstetrics & Gynecology  
Division of Maternal-Fetal Medicine

Volume 7, Issue 3

July 2007

The MFM Newsletter has become a quarterly publication— look for issues in July, October, January and April.

## UPDATE ON MANAGEMENT OF PRETERM LABOR

### Background

A recent editorial in “the Green Journal” - Obstetrics & Gynecology (October 2006) - stated “**Intravenous magnesium sulfate tocolysis remains an North American anomaly.** Given its lack of benefit, and possible harms, magnesium sulfate should not be used for tocolysis.”

As with many medications in our field, this treatment became entrenched in practice long before appropriate medical studies could be performed to document benefit without causing significant side effects. When the original data is examined in detail, one is surprised to see the lack of sufficient scientific proof of the desired effect. Many studies were retrospective and some studies touting effectiveness were completely lacking in data. A Cochrane review of the world’s randomized controlled trials (2,000 women in 23 trials) concluded “*that magnesium sulfate tocolysis is not only ineffective but also harmful to infants.*”

Currently, neither the American College of OB-GYN or the Royal College of OB-GYN endorses use of magnesium sulfate for tocolysis. These published statements have catalyzed our MFM Division to change our policies and procedures in the treatment of women with preterm labor. The article in the Green Journal ends with the following statement: “*Tocolysis with magnesium sulfate is ineffective, and the practice should stop.*”

### Recommendations

**SO – our new policy at EVMS is as follows: unless contraindicated, the first line tocolytic to be used should be INDOCIN:**

*Indomethacin is a prostaglandin antagonist and the most effective tocolytic currently available. It inhibits cyclooxygenase and lipoxygenase and reduces prostaglandin synthesis. There are few contradictions to short term use. It is readily available in most pharmacies and easy to administer.*

**Contraindications** include hypersensitivity to NSAID’s or ASA and NSAID induced asthma. It should be used with caution in patients on anticoagulants, history of a coagulopathy, impaired liver function or asthma, chronic hypertension, congestive heart failure or cardiovascular disease.

**A second line (alternative) choice would be PROCARDIA:**

Nifedipine is a calcium channel blocker and represents another class of drugs that have been used to suppress contractions. Nifedipine inhibits myometrial activity by blocking the influx of calcium through membranes of the myometrial cells. Typically, vasodilation and decreased peripheral vascular resistance occurs resulting in flushing of the skin and a transient increase in maternal and fetal heart rate.

**Contraindications** include cardiac disease such as cardiac conduction defects and left ventricular failure, hypotension, concomitant use of magnesium sulfate, concomitant use of betamimetics such as terbutaline. **Maternal Side Effects:** May include headache, transient hypotension

*(this is unusual in normotensive patients), heartburn, dizziness, tachycardia, facial flushing, nausea and palpitations, constipation, cardiac failure and increase in liver enzymes. Calcium channel blockers have also been associated with maternal hepatotoxicity when administered for preterm labor. Postural hypotension can occur with sudden position changes. **Fetal Side Effects:** May cause decreased uteroplacental blood flow (increased risk for IUGR), fetal hypoxia, and fetal bradycardia*

### Suggested Protocol

#### Indocin (if GA <32 weeks)

**Loading dose:** 100 mg orally preceded by 1 gm Carafate 30 min prior to dose.

**Maintenance dose:** 50 mg orally every 8 hours preceded by 1 gm Carafate, which can be continued for 48-72 hours OR can be discontinued earlier if contractions cease. Long term maintenance is NOT recommended due to its association with oligohydramnios and premature closure of the ductus arteriosus.

#### Nifedipine (alternative therapy or first line if >32 weeks)

**Loading dose:** 10mg orally and then may repeat 10 mg every 15 minutes for a total of 4 doses until the contractions cease (do not use slow release nifedipine). The tablets should be CHEWED and not swallowed for maximum effectiveness.

**Maintenance dose:** 10-20 mg orally every 4-6 hours for up to 72 hours or until contractions cease.

If BP is stable, a long term maintenance dose of 20 mg q 6 or 8 hours may be given where indicated OR 30 or 60 mg of the XL form can be given once daily.

**NOTE: the maximum dose of Nifedipine is 120 mg/day.**

Assess blood pressure, pulse, and respirations every 15 minutes (x2 following loading dose administration and prior to subsequent doses).

Hold dose and notify physician for BP < 100/60 and sustained maternal tachycardia > 120 bpm.

\*During oral tocolytic therapy, vital signs and respiratory status are assessed at least every 4 hours, and immediately prior to administration. It is also important to obtain baseline BUN, creatinine, LFT’s and electrolytes. Close attention to I&O’s, and continuous FHR tracing and toco for contractions are also standard treatment for preterm labor patients until their situation is stabilized.

**References:** Grimes, David, MD and Nanda Kavita, MD, MHS: Magnesium sulfate tocolysis: Time to Quit. October 2006. Obstet-Gynecol (108) No 4: pp. 986-988.

## Meet the New EVMS OB-GYN Residents

This year's new class has set a new record: **THREE** of the incoming interns are graduates of our own EVMS. This has never happened before and we are delighted to welcome all of them along with an additional outstanding student from the University of Cincinnati.



Allyson Hilliard – Graduated from the University of Virginia with a degree in Biology, and soon to graduate from EVMS. Allyson has been an active volunteer in many organizations such as the UVA Madison House, EVMS Office of Admission, Woman's Place and the In-Patient Pharmacy. She has contagious enthusiasm for OB-GYN and does everything with a smile.



Melissa March – Graduated cum laude from John Carroll University in Ohio with a degree in chemistry. She comes to us from a unique 6 year combined college/medical school program at the University of Cincinnati. She has already presented posters at two National Science Foundations. She has volunteered at the Welcome House Shelter of Northern Kentucky and at the Cincinnati Battered Women's Shelter. Her own faculty recommends her as already functioning at the level of an intern.



Nori Sadjadi – Graduated from William and Mary with a degree in Biology and is soon to graduate from EVMS. She has volunteered with Project Smile, NEST, Community Dare Day, Haunted Hallway and Tar Wars. She has presented a poster at a National Meeting of the Society of Developmental Biology. She enjoys figuring things out and looks forward to a challenging career in OB-GYN.



Jenny Wang – Graduated from Duke University with a degree in Biology, also soon to graduate from EVMS. Jenny worked for 2 years doing research at the Duke University Marine Laboratory before coming to medical school. OB-GYN was her first rotation and she's been hooked ever since. She also speaks fluent Mandarin Chinese.

*Good luck and Farewell to (some) of our graduating residents!*



Hakan Duran, MD – Joining the Jones Institute as an REI Fellow

Dana Farabaugh, MD – Joining our own Generalist Division at EVMS

Sophie Zhao, MD – Joining a private practice in California

Steve Granger, MD – Signed on with Clark and Daughtrey in a multi specialty group in Lakeland, FL

**If you have any questions or suggestions regarding the MFM Newsletter, please contact the editor Sue K. Sayegh, M.D. at [sayeghsk@evms.edu](mailto:sayeghsk@evms.edu)**



**EASTERN VIRGINIA  
MEDICAL SCHOOL**  
ESTABLISHED 1973

#616  
EASTERN VIRGINIA MEDICAL  
SCHOOL  
P.O. BOX 1980  
Norfolk, VA 23501-1980