SCHOOL OF MEDICINE
DEPARTMENT OF OBSTETRICS & GYNECOLOGY

STANDARD OPERATING PROCEDURE- GUIDELINE

MAGNESIUM SULFATE BEFORE ANTICIPATED PRETERM BIRTH FOR NEUROPROTECTION

SCOPE/APPLICABILITY:

Physicians may consider using magnesium sulfate for fetal neuroprotection in patients less than 32 weeks gestation who are at risk for delivery within 24 hours.

Areas of Responsibility:
Labor and Delivery, MFM transfer service, OB triage

PURPOSE:

Three large clinical studies have evaluated the evidence regarding magnesium sulfate, neuroprotection and preterm births. The available evidence suggests that magnesium sulfate given before anticipated early preterm birth appears to decrease the risk and severity of cerebral palsy in surviving infants.

PROCEDURE:

Consider treatment for:
Patients at gestational age of 23w0d-32w0d who are in imminent risk of preterm delivery. Imminent risk of delivery defined as actively contracting with cervical dilatation of at least 3 cm, S/P PPROM, or with a planned preterm delivery due to either maternal or fetal indications.

Management:
Dosage: 4 gram bolus IV to be given over 30 minutes followed by 1 gram/hour maintenance for 24 hours

- For planned preterm birth magnesium should be started within 4 hour of delivery
- Magnesium for neuroprotection should be discontinued after 24 hours
- If a patient is being treated with magnesium sulfate for tocolysis at the usual dose of 4-6 gm loading dose followed by 2 gm/hr maintenance, consider decreasing to 1 gm/hour once clinically stable and continuing for 24 hours. No need to re-treat for neuroprotection.
- Emergent delivery should not be delayed to administer magnesium for neuroprotection
- Repeat doses of magnesium for neuroprotection are controversial - the three clinical trials all used different regimens. No regimen was found to be superior – one involved a second course.

Considering the side effects and potential complications associated with magnesium sulfate the regimen chosen appears to be the simplest and safest.

REFERENCES:

1. ACOG COMMITTEE OPINION - Number 455 – March 2010

2. Crowther CA, Hiller JE, Doyle LW, Haslam RR. Effect of magnesium sulfate given for neuroprotection before preterm birth: a randomized controlled trial. Australian Collaborative trial of magnesium sulfate (ACTOMgSO4) Collaborative Group. JAMA 2003;290:2669-76.
3. Marret S, Marpeau L, Zupan-Simunek V, Eurin D, Leveque C, Hellot MF, et al. Magnesium sulfate given before very preterm birth to protect infant brain: the randomized controlled PREMAG trial. PREMAG trial group. BJOG 2007; 114:310-8.
4. Rouse DJ, Hirtz DG, Thom E, Varner MW, Spong CY, Mercer BM,et al. A randomized, controlled trialof magnesium sulfate for the prevention of cerebral palsy. Eunice Kennedy Shriver NICHD Maternal- Fetal Medicine Units Network. N Engl J Med 2008;358:895-905

APPROVALS:

SOP Owner:	Conrad Chao, MD	Date: 6/28/20
Chair Approval:		Date: 6/29/2020
Effective Date:	June 28, 2020	