Maternal-Fetal Medicine Care Update – Late-Term Maternal Steroids

Since first adopted in the 1970s, antenatal corticosteroids have been routinely used to aid in the prevention of prematurity-related sequelae. A 2006 Cochrane review of 21 RCTs demonstrated a significant reduction in: Respiratory Distress Syndrome (RDS) (RR 0.66), Intra-Ventricular Hemorrhage (IVH) (RR 0.54), Necrotizing Enterocolitis (NEC) (RR 0.46), and neonatal death (RR 0.69) with the use of antenatal corticosteroids related to preterm birth. These benefits were conferred without increased maternal risks of infection.

The traditional window for administering maternal antenatal steroids was 23-34 weeks, based on the available evidence. However, a recent study in the NEJM (Gyamfi-Bannerman, 2016) has led to a change in Maternal-Fetal Medicine protocols here at MUSC. Extending the gestational age period for antenatal steroids to 23-36 6/7, the authors performed a randomized, controlled trial and found that neonatal outcomes. Extension of the use of corticosteroids in the late pre-term gestational period resulted in decreased need for neonatal therapy in the first 72 hours (Less CPAP, supplemental oxygen > FiO2: 40%, mechanical ventilation, and ECMO use) The number needed to treat was 1/35 to prevent an intervention and 1/25 to prevent severe respiratory symptoms.

The data was compelling enough to result in changes in perinatal recommendations from ACOG and the Society for Maternal-Fetal Medicine. Accordingly, the Maternal-Fetal Medicine Division at MUSC has adopted and now recommends the use of extended gestational age maternal corticosteroids and published a protocol for use on Labor and Delivery and in our perinatal offices.

There are some exclusions. In the late preterm period (34-36 6/7) tocolysis is not recommended to prolong pregnancy for the purposes of corticosteroid administration. Induction of labor may be delayed for 12 hours to allow for administration of antenatal corticosteroids, if delay is considered safe. There is no evidence to support significantly delaying induction of labor (>12 hours) in patients with PPROM >34 weeks gestation for purposes of administration of antenatal corticosteroids.

Use of extended gestational age maternal steroids did increase the incidence of neonatal hypoglycemia in the study. Nearly 25 % of exposed neonates in the trial experienced moderate to severe hypoglycemia. Accordingly, use in mothers with overt or gestational diabetes is not recommended at present. Use in the morbidly obese should prompt increased surveillance. Additional research into this side-effect is needed and our division is already examining this effect. We have seen no significant increases here at MUSC in moderate to severe hypoglycemia since adopting this protocol.

The evidence would suggest that early adoption of this new protocol could save substantial health care costs in terms of utilization of NICU-Level II admissions for near-term neonates. There is an increasing number of medically indicated near-term deliveries and this new data is timely for South Carolina and MUSC. The MFM division’s goal is to use the latest information for our patients and the perinatal region to meet the goals of improved outcomes, reduced costs and better satisfaction.