

## **Maternal Chorioamnionitis:**

### **Approach to the Evaluation and Management of the Baby**

The reporting of chorioamnionitis in mothers is being seen with increasing frequency in our hospital. This is in part due to the use of maternal fever as a surrogate for this diagnosis without other supporting signs or symptoms. The AAP in their 2012 Clinical Report on "Management of Neonates With Suspected or Proven Early-Onset Sepsis"(1) suggested the need for diagnostic evaluation and initiation of antibiotic therapy for all babies (symptomatic and asymptomatic) delivered to mothers who have the diagnosis of chorioamnionitis. There was a caution that the baby's physician should communicate with the mother's physician concerning the strength of this diagnosis in the mother particularly when evaluating term infants. These AAP guidelines have been questioned recently by a growing number of clinicians (2) and one multicenter, prospective surveillance study determined that with complete implementation of these guidelines 60-1400 newborns would receive diagnostic evaluations and antibiotics for each infected asymptomatic newborn, depending on the chorioamnionitis prevalence(3). In the reappraisal of the AAP Guidelines (2) Benitz et al point out the infrequent occurrence of EOS in infants ( $\geq 35$  weeks gestation) whose mother's had clinical chorioamnionitis, not limited to simply intrapartum fever (0.47-1.24%, NNT to prevent one infection 80-210) and they contrasted that to preterm infants who were at greater risk (4.8-16.9%, NNT 6-21). Intrapartum fever without additional signs or symptoms of chorioamnionitis cannot be ignored since over a quarter of asymptomatic term infants with sepsis had maternal fever as the only indicator for sepsis evaluation (4).

### **Our Clinical Setting Course of Action:**

All babies cared for in our hospital have an assigned physician. Those babies who do not have a care provider established at the time of birth are placed on the Pediatric Resident service. Evaluating and managing these babies is an essential and valuable part of resident training. Attending physician involvement and oversight is therefore a requisite to assure appropriate care of the baby and education of the resident.

As we currently practice, all babies  $\leq 34$  0/7 weeks are admitted to the NICU regardless of the mother's history regarding intrapartum fever or chorioamnionitis. These babies undergo transition in the NICU and there is no immediate involvement with the baby's primary care physician or the resident team. If the baby is  $>34$  0/7 weeks gestation and the mother has a

history of intrapartum fever or chorioamnionitis the baby is likely to have a transition period to assess for presence or absence of symptoms suggestive of infection:

- Fever ( $\geq 37.5$  C R)
- Persistent or recurrent hypothermia ( $< 36.5$  C R)
- Hypotension, poor perfusion or prolonged capillary refill time
- Respiratory distress as evidenced by tachypnea that is persistent and prolonged
- Cyanosis with use of supplemental oxygen not improving within 6 hours
- Grunting, Flaring or Retractions
- Tachycardia (HR  $> 160$  BPM)
- Apnea/Bradycardia/Desaturation events (any combination of these events)
- Acidosis (pH  $< 7.25$ )
- Lethargy or irritability documented in the chart
- Abdominal distention or bilious vomiting
- Hypoglycemia (blood glucose  $< 40$  mg/dl)
- Evidence of bleeding or petechiae

If the baby is symptomatic he/she is admitted to the NICU and cared for by the neonatologist. The remaining question is what pathway is taken for the baby whose mother had an intrapartum fever or reported chorioamnionitis but is **asymptomatic** at birth. Please note that by the very fact the mother presented with or developed intrapartum fever or chorioamnionitis this baby is no longer a normal newborn and should not be thought of as such. The recommended guidelines are:

- Notify the primary care physician or if on the resident service the attending physician **and** the covering resident immediately about the maternal fever and/or diagnosis of chorioamnionitis. A determination of the need for blood culture at this time should be made.
- The baby should then be admitted to the NICU as a Pediatric patient boarding in the NICU remaining on the resident service or under the care of his/her primary care physician. A NICU nurse will be assigned as the primary nurse for this patient and will assure that frequent examinations of the baby will be performed and any change in status or development of signs/symptoms suggestive of sepsis will be reported immediately to the baby's physicians. The NICU nurse will be teamed with a post-partum nurse whose goal is to assist in the process and thereby acquire the necessary skills to independently perform this task.
- There will be an order for the baby to have a CBC, differential and CRP level done at 6-8 hours (a glucose level will also be obtained if stable glucose homeostasis has not been documented) and again at 24 hours of life.

- During normal rounding there should be physician to physician communication with consultation of the neonatologist on call. Obviously, if the baby's condition merits earlier evaluation by the neonatologist this physician to physician communication should take place at that time and not be delayed. If transfer of care is desired this can be determined during this communication and any such transfer of care needs to be documented in the medical record and the nursing staff needs to be made aware of the change.
- If any asymptomatic baby develops signs or symptoms of infection he/she will be transferred to the NICU and the baby's physician as well as the covering neonatologist will be informed immediately. If the baby is then admitted to the NICU the neonatologist will assume care as the primary attending and this change will be noted in the medical record.

#### References:

- (1) Pediatrics 129 (5);1006-1015
- (2) Journal of Pediatrics 166 (4);1070-1074
- (3) Pediatrics 137 (1);1-11
- (4) Journal of Perinatology 22;653-657