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Management of Patients with Anticipated or At-Risk Delivery in the Periviable Period

This Clinical Practice Guideline was developed in collaboration with Neonatology at Akrons Children Hospital.

Background:

Although only 0.5% of all births occur at or below 27 weeks, these very early deliveries account for the majority of neonatal deaths and >40% of infant deaths. (1) Anticipated delivery near the limits of viability poses complex and ethically challenging decisions for both families and health care teams, thus, remaining one of the most challenging issues faced by obstetricians and neonatologists. Periviable birth is defined as delivery occurring from 20 0/7 weeks and 25 6/7 weeks. (2) To address the complexity of counseling and care, the Society for Maternal-Fetal Medicine, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD), the Section on Perinatal Pediatrics of the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists convened a joint workshop in 2013. The executive summary from this workshop discusses the benefits and risks of obstetric and neonatal interventions related to periviable birth, provides an outline for counseling and describes newborn outcomes. In 2017, ACOG made recommendations to consider neonatal resuscitation at ≥23 weeks gestation. (3) With newer data suggesting improved outcomes at lower gestational ages, the ACOG and SMFM revised their recommendations regarding use of antenatal corticosteroids at 22 weeks gestation (4). The goal of this clinical practice guideline is to establish a standardized approach to the ACH MFM patient at risk for periviable delivery with respect to counseling and management.

Outcome Data

Since 2017 numerous studies have demonstrated improved survival statistics for infants actively resuscitated at ≥22 weeks gestation (5-10). In 2020, Watkins demonstrated survival to discharge with no/mild NDI of 35% (5). Since then, multiple other studies have similar survival statistics ranging from 29-45% (6-10). A large meta-analysis published in 2021 of 31 studies in 13 countries found overall survival at 29% with survival without moderate or severe impairment at 37% (6). Another study performed in 19 US centers demonstrated 30% of 22 week infants survived to 1 year or discharge if actively treated (8). In addition, the provision of antenatal steroids has demonstrated twice the survival rate compared to no steroids in multiple studies (6-10). One study demonstrated improved survival with administration of steroids in the 21st week of gestation and delivery >22 weeks (10).

Clinical Considerations and Management

1. The option for neonatal resuscitation and obstetric interventions to improve neonatal outcomes is offered at **22 0/7 weeks gestation** for patients delivering at Summa Akron City Hospital and Aultman Hospital, and interventions that improve neonatal outcome and delay delivery may be considered at **21 5/7 weeks**.
2. Shared decision making between medical team and family will be performed to direct care plan. Patient will undergo MFM and Neonatology Consultation.
3. Patients not admitted to hospital but at risk for periviability delivery can undergo outpatient Neonatology consult. For Akron site, contact Carrie Gardiner FTC to coordinate.
4. If delivery occurs at >22 0/7 weeks prior to counseling, active neonatal resuscitation will be performed initially until further assessments and family discussion can be accomplished.
5. Liveborn infants at 24 0/7 weeks will undergo active neonatal resuscitation efforts.

Goals for Counseling:

1. Provide objective information in compassionate manner
2. Permit shared decision making and support the family

3. Tailor approach and language to family needs and preferences
4. MFM and Neonatology should confer to avoid conflicting information- should meet the parents together if feasible.
5. Post-counseling debriefing should occur to share and confirm the decisions.
6. Repeated counseling should occur as clinical circumstances change.

Specific Counseling:

1. Provide data regarding survival and disability that is as individualized as possible: The Extremely Preterm Birth Outcomes Tool is the most widely used tool that provides a range of possible outcomes for infants born extremely preterm. It considers five factors: GA, Estimated weight, sex, singleton/multiple birth, exposure to antenatal steroids: Use the Tool | NICHD - Eunice Kennedy Shriver National Institute of Child Health and Human Development (nih.gov)
2. MFM to discuss available obstetric interventions including potential benefits and risks: tocolysis, magnesium sulfate for neuroprotection, antenatal steroids, antibiotics to prolong pregnancy latency if applicable, exam-indicated cerclage and possible classical cesarean delivery with implications for future pregnancies. These interventions should be considered in the context of the patient's goals of care (resuscitative vs palliative) and decided upon individually. **Initiation of some interventions does not mandate that all interventions be undertaken.** Ie- a patient may elect to have antenatal steroids in the event baby is born alive and desire resuscitation but may decide against a cesarean delivery given maternal risks.
3. While fetal monitoring is in most cases linked to the decision to provide a cesarean delivery for fetal indications, it may be considered even if cesarean is not planned if the patient desires neonatal resuscitation of a liveborn infant and it is believed that intrauterine resuscitation will affect the infant's outcome.
4. A decision regarding whether or not to administer antenatal steroids will be linked to decision for resuscitation and should be considered in that context. Magnesium prophylaxis is recommended if periviable delivery of a potentially viable infant is anticipated.
5. A decision to proceed with resuscitation always should be informed by specific clinical circumstances and family values. A decision not to undertake resuscitation of a live born infant should not be seen as a decision to provide no care, but rather a decision to redirect care to comfort measures
6. Neonatology to discuss anticipated NICU care including options for comfort care and circumstances that might result in reconsideration of interventions, and will document patient's wishes for individual postnatal interventions. Palliative care is an important aspect of prenatal care.
7. Offer family time to think about information if circumstances permit and encourage input from patient's family support system.

Documentation of Counseling and Plan:

Documentation regarding interventions should be specific and clearly communicated to team members caring for patient. Avoid vague language, "Patient wants everything done", "Parents want nothing done" (2)

Available smartphrase that can be tailored to specific patient's needs: .mfmperiviabilitycounseling

The patient was counseled regarding the complexity of her situation at her current GA. She was provided the following statistics from the NICHD Extremely Preterm Birth Outcomes Tool, understanding that these data provide estimates based on population data and cannot predict with certainty the outcome for an individual newborn.

Use the Tool | NICHD - Eunice Kennedy Shriver National Institute of Child Health and Human Development (nih.gov)

Average survival with active treatment:

Outcomes at 18-26 months of age in survivors:

Profound ND impairment:

Moderate to Severe ND impairment:

Blindness:

Deafness:

Moderate to Severe CP

Cognitive Developmental Delay:

*Additional factors that may influence her newborn's individual outcome include: ****

The patient was counseled that neonatal survival is improved in newborns actively resuscitated who receive antenatal steroids versus those who do not. Magnesium sulfate has been demonstrated to decrease the risk for cerebral palsy and gross motor dysfunction in premature infants and should be given if delivery is anticipated and neonatal resuscitation is desired. The risks of cesarean delivery, including the potential need for classical uterine incision and implications for future pregnancy were reviewed.

After counseling on neonatal survival and disability statistics, and considering the risks/benefits of obstetric interventions, the patient has currently decided on the following care plan:

1. *Neonatal resuscitation or Comfort Measures Only in Delivery Room*
2. *Tocolysis: yes/no/N/A*
3. *Antenatal Steroids: yes/no*
4. *Magnesium for NP: yes/no*
5. *Fetal monitoring: yes/no*
6. *Cesarean Delivery: yes/no*

Please see Neonatology Consult regarding the patient's desires for or against specific postnatal interventions. The patient understands that this plan can be adjusted per their wishes as clinical condition evolves.

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