

What's New in NICU

Dave Hampton RRT, MEd

This is not your Mother's NICU

- Things are different and they are going to continue to be different!

Birth Rates

- U.S.
- Kansas
- Effects on the NICU

Labor and Deliver

- Elective Inductions before 39 0/7
- Strict medical guidelines (MFM approval)

Labor and Delivery

Post-Term Pregnancy (PTP): reached or extended beyond 42 0/7 weeks

Late-Term Pregnancy (LTP): reached between 41 0/7 and 41 6/7 weeks

Increased Risks of LTP and PTP

- Post-maturity syndrome
- Macrosomia
- Oligohydramnios
- Meconium Aspiration Syndrome

Level A Evidence & Recommendations

- LTP & PTP: associated with an increased perinatal M&M
- Induce labor after 42 0/7 weeks and by 42 6/7
- Inductions between 41 0/7 & 42 0/7 can be considered
- ACOG Practice Bulletin, Number 146, Aug 2014

Magnesium Sulfate for Fetal Neuroprotection

- FDA has changed MgSO₄ from Pregnancy category A to D
- Giving MgSO₄ for greater than 5-7 days in an attempt to stop pre-term labor can cause osteopenia and fractures
- Evidence suggests that MgSO₄ decreases in Preterm Births

Committee Opinion

- Short-term MgSO₄ for appropriate treatment:
- Preeclampsia
- To allow for administration corticosteroids
- Fetal neuroprotection for delivery at less than 32 weeks

Baby Friendly Criteria

- A Quality Improvement Initiative from WHO
- Achieved by meeting minimum standards on core objectives:
 - 10 steps for successful breast feeding
 - Skin to skin
 - Safe formula preparation for non-BF infants

Baby Friendly NICU

- 80% of mothers will report skin-to-skin as soon and as often as they want
- 80% received correct information on how to express milk

JCAHO and Baby Friendly

- JCAHO is also going to require minimum standards in the pre-mentioned areas.
- Not as rigid as WHO requirements
- What's the big deal??

Non-Baby Friendly Consequences

- Beginning in 2017 meeting these measures will affect re-imburement from Medicaid and 3rd party payers.
- **ACROSS** the hospital, **NOT** just maternity services

Skin to Skin Results

Necrotizing Enterocolitis

- 7% - 12% prevalence in LBW infants (<1500)
- 20% - 30% death rate
- Total cost in the US exceeds One Billion annually
- Cost for a “short bowel” patient exceeds One Million in less than 5 years

Necrotizing Enterocolitis

- Changes in intestinal flora
- Treatment or Prevention?
 - Breastfeed, breastfeed, breastfeed,.....

Donor Milk

- Prolacta
 - Screening
 - Works great
 - Costs LOTS!!!

Probiotics

- Can Jamie Lee Curtis help?
- Manufacturing issues
- Live Biotherapeutics
- Current Research
 - Lactobaccilus and Bifidobacteria
 - Primary outcome is NEC

Retinopathy of Prematurity

- Lasers are out
- Avastin is in
- Look for treatment options from Europe in the future

Pharmokinetics

- Pediatric Trial Network (NIH)
- “Old way” weight based
- “New way” weight based with consideration for gestational age
- Flagyl, Zosyn, Acyclovir

Chronic Lung Disease

- Have we improved?
- Anything new in the future?
 - Lasix
 - Budesonide

Surfactant

- New indications
 - Meconium and pneumonia per AAP

New delivery methods

LMA

Aerosol

To deliver other medications

What about synthetics?

Continuous Positive Airway Pressure

- Indications??
- Better than surfactant????????????????????????????????
- Best device??
- Best patient interface??????????????????????????????????

Ventilation including Non-invasive and HFOV

