High Risk Newborn

R.Thomas

Small for Gestational Age (SGA)

- < 10% on growth chart
- Preterm, term or post term
- Pathologic or non pathologic
- Common Problems
  - Head disproportionate
  - Wasted appearance
  - Jittery/hypoglycemia
  - Scaphoid abdomen
  - Poor muscle tone
  - Polycythemia
  - MAS
  - Thermoregulation/ SC fat stores

Fetal Growth Restriction (FGR)

- Fetus did not grow appropriately
- Related factors
  - Maternal
    - Environmental
    - Placental
    - Fetal
- Symmetrical IUGR
- Asymmetrical (disproportional) IUGR
- Catch up by 1 year of age

Large for Gestational Age (LGA)

- Genetic predisposition or diabetic mother
- > 90% growth chart
- Fat, puffy
- Associated problem
  - Birth trauma, hypoglycemia, polycythemia, hyperbilirubinemia

Gestational Age Variations

- Preterm newborn
- Late preterm newborn
- Full-term newborn
- Postterm newborn

Preterm Infants

- Characteristics
- Associated problems
  - RDS, BPD, NEC, cold stress, ROP

Preterm Infants- Nursing Intervention

- Newborn Resuscitation
- O2
  - CPAP
  - Pulse oximetry
- Positioning of Infant
- Suctioning
- Hydration
- Thermoregulation
- Fluid & Electrolyte Balance
- Prevent infections
- Skin integrity
- Stimulation
- Pain Assessment
- Rest
- Readiness for feeding
- Gavage feedings
- Prevent complications
- Parental support
- Preparing for discharge

Post term

- > 42 weeks from LMP
- Postmature- placental insufficency and > 42 weeks
- Characteristics
- Associated problems
  - Birth trauma
  - Clavicle fracture
  - Cephalhematoma
  - Subconjunctival hemorrhage
  - Caput
  - Hypoglycemia
  - MAS
  - polycythemia

Hypoxic-Ischemic Encephalopathy

- Systemic hypoxemia or ↓ cerebral blood flow → neonatal brain injury
- Risk factors
  - Trauma, intrauterine asphyxia, sepsis, malformations, hypovolemic shock, medications
- Nursing Management
  - Dry immediately
  - Stimulate
  - Under radiant warmer
  - Resuscitation- CAB

Transient Tachypnea of the Newborn

- Etiology
- S/S
  - S/S similar to RDS
- Treatment/Management
  - Supportive care
    - Oxygen
    - Antibiotics

Respiratory Distress Syndrome (RDS)

- AKA- hyaline membrane disease
- Etiology
- S&S
  - Grunting- expiratory
  - Retractions- intercostal, xiphoid
  - Nasal flaring
  - Seesaw respirations
  - Apnea
  - Cyanosis
  - Tachypnea
- Transient tachypnea of newborn
- Treatment/ Nursing care

Silverman Anderson Index

- Chest/abdominal movement
- Intercostal spaces
- Xiphoid process
- Nares
- Expiratory sound

Meconium Aspiration Syndrome (MAS)

- Aspirated in utero or first few breaths after birth
- Intrauterine hypoxia (causes relaxation of anal sphincter)
- Enters the lung → airway obstruction → pneumothorax
- Treatment
  - Suction
  - Antibiotics if necessary

Bronchopulmonary Dysplasia (BPD)

- Complication of RDS
- Long term lung disease
- Aveolar damage due to PPV and ↑ O2 [ ]
- Difficult weaning off ventilator
- Recovery- ↓ dependence on O2 therapy
- Several months to recover
- Long term care
- Developmental delays

Retinopathy of Prematurity

- Immature retinal blood vessels
- Associated factors
  - Low birth weight infants
  - Excessive O2
  - Blood transfusions
  - Multiple births
- Myopis, retinal detachment, blindness
- Management
  - Ophthalmology consult
  - Weekly exams
  - Abnormal vessels- lazer

Periventricular-Intraventicular Hemorrhage

- Etiology
  - prematurity
- S/S
- Dx
- Treatment/Management

Necrotizing Enterocolitis (NEC)

- Acute inflammation of bowels
- Ischemia & necrosis
- Associated factors
  - Prematurity, perinatal factors, bwel hypoxic ischemia, formula feeding
- S&S
  - Feeding intolerance, decreased or absent bowel sounds, abdominal distention, blood in stool, diarrhea, respiratory distress, metabolic acidosis, sepsis, apnea, shock
- Dx
  - ABG, CBC, blood culture, abdominal X-Ray
- Treatment

Infant of DM Mother

- Pathophysiology
- Complications/ Common problems
  - Macrosomia, RDS, hypoglycemia, hypocalcemia, hypomagnesemia, polycythemia, hyperbilirubinemia, congenital anomalies
- S/S
- Treatment/Management

Birth Trauma/ Birth Injuries

- Physical injury during L&D
- Common types
  - Fractures
  - Facial nerve paralysis
  - Brachial plexus injury (nerve paralysis) (erb's duchane)
  - Head trauma
    - Cephalhematoma
    - Caput succedaneum
    - Intracranial hemorrhage
- Assessments
- Nursing Care

Cephalhematoma

- Collection of blood
- Does not cross the suture line
- Unilateral or bilateral
- Disappears 2-3 weeks
- Physiological jaundice

Prenatal Drug Exposure/ Mothers with Substance Use Disorder (SUD)

- Substances- "5 A's" approach
  - ask, advise, assess, assist, arrange
- Physiological response
- Intrauterine hypoxia due to maternal withdrawal
- Neonatal Abstinence Syndrome- "WITHDRAWAL" acronym
- CNS dysfunction, metabolic vasomotor, respiratory disturbances, GI dysfunction
- Nursing care

Fetal Alcohol Spectrum Disorder

- Fetal alcohol syndrome
- Fetal alcohol exposure
- Withdrawal S&S
- Nursing Care

Hyperbilirubinemia

- Etiology
- Pathological Jaundice
- Physiological jaundice
- Treatment
  - Frequent feeding
  - Phototherapy
    - Prevent kernicterus

Phototherapy- Nursing Care

- 42 cm from light (18-20")
- Eye patches and genitals covered
- Monitor temp
- Prevent dehydration
- I&O
- Turn and reposition
- No lotion to skin
- Bronzing of skin
- Parent education
- Exchange transfusion

Neonatal Sepsis

- Immature immune system
- Infections can be acquired
  - In utero
  - During delivery
  - nosocomial
- Most common pathogen
  - E.Coli & Beta strep
- Assessment
- S&S
- Treatment

Opthalmia Neonatorum

- Gonorrhea or chlamydia
- Erthromycin ophthalmic ointment 5%
- Can result in blindness

Anencephaly

- congenital
- Failure of closure of anterior area of the neural tube
- No cerebrum, cerebellum and flat bones of skull
- Etiology
- Prognosis- death

Microcephaly

- Small head in relation to body size
- Etiology
  - X-Ray exposure
  - Rubella
  - CMV
  - Infectious diseases
- Prognosis
  - Psychomotor retardation

Congenital Defects

- Neural Tube Defects
  - Spina bifida occulta
  - Meningocele
  - Myelomeningocele
- Congenital Cardiac Defects
  - S/S
  - Assessments

Diaphragmatic Hernia

- Stomach into intestines
- ↓ lung expansion
- S&S
  - Mild to severe respiratory distress
  - Scaphoid abdomen
  - Asymmetrical chest expansion
  - Bowel sounds in thorax
- Dx
  - Prenatal US
  - X-Ray
- Treatment

Phenylketonuria (PKU)

- Metabolic disorder
  - Disorder of amino acid metabolism
- Hereditary
- Autosomal recessive trait
- Lacks converting ability of phenylalanine to tyrosine
- Blond hair, blue eyed, fair complexion, boys

Phenylketonuria (PKU)

- S&S
- Dx
  - Guthrie test (Guthrie bacterial inhibition assay)
- Treatment
  - Milk based formulas with low phenylalanine
    - Lofenalac, minafen, albumaid XP
  - Treatment for life- ↓ phenalyaline (low protein foods)
  - Breast milk contains phenylaline
  - PKU meds- Kuvan (saproprotein dihydrochloride)

Hemolytic Disease of the Newborn

- Destroy fetal RBC
- Hyperbilirubinemia and jaundice (icterus)→ neuro damage (deafness)
- Kernicterus→ encephalopathy
- Erythroblastosis fetalis
- Hydrops fetalis

- Indirect Coomb's test
- Direct Coomb's test

Hemolytic Disease of the Newborn

- If Rh – mother is sensitized →
  - antibody titer every 2 weeks starting @ 16 weeks
  - Then biweekly during 3rd trimester
  - If titer > 1:16 → PUBS, amnio, USS
- Level I
- Level II
- Level III

Congenital Conditions

- Imperforated anus
- Esophageal atresia
- Tracheoesophageal fistula
- Omphalocele and Gastroschisis
- Anorectal malformations
- Bladder exstrophy

Hypospadius/ Epispadis

- Hypospadius- underside
- Epispadis- upper side

- Treatment
  - surgery

Talipes Equinovarus (clubfoot)

- Etiology: unknown
- Unilateral or bilateral
- Treatment
  - Successive plaster casts
  - Parent education

Congenital hip Dysplasia

- Impaired hip development
- Unilateral or bilateral
- Etiology: unknown
- S&S
  - Wide perineum if bilateral
  - Shortening of limb
  - Asymmetrical gluteal folds
  - Shortening of femur
  - + ortalani Manuver
  - + barlow's test
- Treatment
  - ASAP
    - Newborn- double or triple diaper
    - Toddler- hip cast, open reduction
    - School Age- total hip replacement

Polydactyly & syndactyly

- Polydactyly- extra digits
- Syndactylyl- webbing of fingers or toes

AIDS

- Transplacental, during birth, breast milk
- Testing
  - PCR
- S&S Early:
  - liver & spleen enlargement
  - Lymphadenopathy
  - Failure to thrive
  - Thrush
  - Seborrheic dermatitis
  - Bacterial infections
- Treatment
  - antiretrovirals

Hypoglycemia

- S&S of hypoglycemia
- Treatment

Congenital Hypothyroidism

- Screening
- S&S
- Treatment

Shaken Baby Syndrome (SBS)

- Vigorous shaking
  - Subdural/subarchnoid hemorrhage
  - Retinal hemorrhage or detachment
  - Damage to spinal cord
  - Skull fractures
- Prognosis
  - Severe brain damage
  - Death

Child Abuse/Neglect

- Nurse required to report all cases of suspected abuse or neglect
- Physical, mental, emotional, sexual
- Factors