

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 insufficiency 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
- Alveolar 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
- Myopia, retinal detachment, blindness
- Management
 - Ophthalmology consult
 - Weekly exams
 - Abnormal vessels– laser

Periventricular–Intraventricular Hemorrhage

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

Necrotizing Enterocolitis (NEC)

- Acute inflammation of bowels
- Ischemia & necrosis
- Associated factors
 - Prematurity, perinatal factors, bowel 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) (erbs' 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



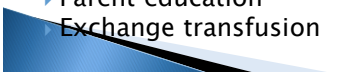
Hyperbilirubinemia

- 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

Ophthalmia Neonatorum

- Gonorrhea or chlamydia
- Erythromycin 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– ↓ phenylalanine (low protein foods)
 - Breast milk contains phenylalanine
 - PKU meds– Kuvan (sapropterin 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



Hypospadias/ Epispadis

- Hypospadias– underside
- Epispadis– upper side
- Treatment
 - surgery



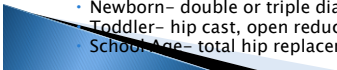
Talipes Equinovarus (clubfoot)

- 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
 - + Ortolani 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
- Syndactyly– 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