

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



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



Preterm Infants

- ▶ Characteristics

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



Preterm Infants– Nursing Intervention

- ▶ O2
 - CPAP
 - Pulse oximetry
- ▶ Positioning of Infant
- ▶ Suctioning
- ▶ Hydration
- ▶ Thermoregulation
- ▶ Fluid & Electrolyte Balance
- ▶ Skin integrity
- ▶ Pain Assessment
- ▶ Rest
- ▶ Readiness for feeding
- ▶ Gavage feedings
- ▶ Parental support



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
 - Retractions
 - 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



Intraventricular Hemorrhage

- ▶ Etiology
- ▶ S/S
- ▶ Dx
- ▶ Treatment/Management



Necrotizing Enterocolitis (NEC)

- ▶ Acute inflammation of bowels
- ▶ Ischemia & necrosis
- ▶ Associated factors
- ▶ S&S
- ▶ Dx
- ▶ Treatment



Infant of DM Mother

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

Birth Trauma

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

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



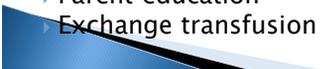
Hyperbilirubinemia

- 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

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

Short Bowel Syndrome

- ▶ Etiology
- ▶ S/S
- ▶ Treatment/Management



Ophthalmia Neonatorum

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



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 (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

Cephalhematoma

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

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

Polydactyly & syndactyly

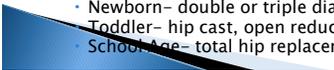
- ▶ Polydactyly- extra digits

- ▶ Syndactylyl- webbing of fingers or toes



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



Talipes Equinovarus (clubfoot)

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



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

Hypospadias/ Epispadis

- ▶ Hypospadias- underside
- ▶ Epispadis- upper side

- ▶ Treatment
 - surgery

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



Congenital Defects

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



Congenital Conditions

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



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