

Prematurity

Objectives

Knowledge of criteria of premature baby

Identification of medical problems(complications)

Management of prematurity

Definitions

<37 wks gestation-premature

LBW <2.5 kg 3 groups: -

1-preterm AGA

2-Term SGA

3-Preterm SGA

VLBW <1.5 kg 500-1500 gm

Immature LBWT <750 GM

Previable <500 gm <22 wks

Appearance

*Very preterm infants have very thin dark red transparent skin

*No palpable breast tissue

*Shapeless soft ears

*Testes have not yet descended to the scrotum

* female has widely separated labia majora and protruding labia minora

*They lie with their arms and legs extended and have poor muscle tone

There is little subcutaneous fat and the legs are extended rather than flexed (an indication of reduced tone). the ears tend to be floppy because of reduced cartilage and the skin is thin therefore looks red

Medical problems of preterm infants

1-need for resuscitation at birth

2-respiratory

***RDS**

Deficiency of surfactant which leads to alveolar collapse and Inadequate gas exchange. More preterm, the higher incidence of RDS. Exogenous surfactant therapy has been a major advance.

***Pnuemothorax**

Air leaks in the pleural cavity in 20% of infants ventilated for RDS

***Apnea and bradycardia**

Common in VLBWT

Cardiac complications

3- Hypotension

4-PDA common in RDS may produce no symptoms or cause apnea and bradycardia with difficulty in weaning the infant from artificial ventilation and also bounded pulses

5-Temp. Control

_ Because preterm has larger surface area relative to BWT, Skin is thin, Unable to shiver and nursed naked

6- Fluid balance

Vary with gestational age 60 ml/kg in 1st day, ↑ 30 ml/kg /day up to 180 ml/kg/day

7-Nutrition

Have nutritional requirement because of their rapid growth, preterm of 28 wks gestation doubles his BWT in 6 wks, triples in 12 wks. Term baby doubles in 4.5 months, triples in a year. Infants of 35-36 wks are mature enough to suck and

swallow milk, less mature will need to be fed via an oro or nasogastric tube. Breast milk is preferable. There are special infant's formulas for LBW. Parenteral nutrition is required in sick infants

8- Metabolic

- * Hypoglycemia
- *hypocalcaemia
- *electrolyte imbalance
- *osteopenia of prematurity

9-Infection

During or shortly after birth from maternal birth canal or nosocomial

10-Intracranial lesions

- * Periventricular hemorrhages occur in 25% of VLBW
- *dilatation of ventricles (hydrocephalus)
- *ischemic lesions of periventricular leucomalacia

11-NEC

Serious illness in 1st few weeks, caused by ischemia of the bowel wall may be accelerated by feeding with milk represented by vomiting and abdominal distension

12- Retinopathy of prematurity

Affects developing blood vessels, vascular proliferation → retinal detachment

13-Iatrogenic disease

14- Bronchopulmonary dysplasia BPD

Infants who have a prolonged oxygen requirement beyond 28 days of life or gestational age 36 wks.

15- Anemia of prematurity

16- Problems following discharge

***shorter and thinner than full term infants**

*** Readmission to hospital during the 1st year increases 4 folds in VLBW**

*** Recurrent wheezing in infants with BPD, monoclonal antibody to RSV antigen monthly reduces the hospital admission rate of preterm infants**

Inguinal hernia *

***neurodevelopmental problems**

#visual impairment

#hearing loss

#cerebral palsy

#delayed language development

#learning difficulties

#poor attention span

#difficulty with fine motor skills

#behavior problems

Stabling the preterm infant (sick or <34 weeks)

1-additional oxygen and artificial ventilation for RDS or preterm < 34 weeks in the absence of RDS

2-circulatory support

Given with blood transfusion, saline transfusion or inotropic drugs

3-monitoring

HR, RR, TEMP. Oxygenation is measured by pulse oximetry, O₂, Co₂ tensions

Blood gases analysis (arterial sample)

4- CXR –to diagnose respiratory disorders

5-avoid hypothermia Under a radiant warmer or incubator

6- antibiotics-broad spectrum antibiotics

7-metabolic disturbances

Blood glucose is checked regularly IV dextrose given, Fluid requirement

8-Minimal handling

All procedures especially painful adversely affect oxygenation and circulation. Sedation given as required. Handling is kept to a minimum

9-parents

Time must be found for parents to allow them to see and touch their baby and to be kept fully informed