Chapter 43 Care of the Neonate

Delivery Room Care

° Airway
  o Suction airway.

° Breathing
  o Monitor respiratory status.

° Circulation
  o Monitor for circulatory changes.

° Temperature
  o Begin thermoregulation to prevent cold stress.
    • Heat loss by convection, radiation, evaporation, conduction [corresponds to Figure 43-2]
  o Brown fat deposit is burned to keep warm (nonshivering thermogenesis).
  o Heat loss can be life-threatening.

° Newborn test scores
  o APGAR score [corresponds with Table 43-1]
    • Rapid evaluation of the infant’s adaptation to extrauterine life
    • Assessed at one minute and five minutes of age
    • Score of 0 to 2 for each of following parameters:
      ↑ Heart rate
      ↑ Respiratory rate
      ↑ Muscle tone
      ↑ Reflex irritability
      ↑ Color
    • Score below 8 may require resuscitation.
      o Ballard score (see Appendix V, Figure A-1) – rates maturity of newborn

° Identification
  o Apply identification bands and footprint.

° Measurements of neonate
  o Obtain height and weight, measure head and chest. [corresponds to Figures 43-3 and 43-4]

Nursery Care

° Respiratory distress
  o Subtle changes indicate difficulty with gas exchange.
  o Signs of respiratory distress:
    • Nasal flaring
    • Expiratory grunting
    • Retractions (intercostal, subcostal, substernal)
    • Apneic spells
  o Report immediately.

° Bathing
  o Expose only the area being washed.
  o Wash hair with warm water and dry with warm towel.
  o Dress with diaper and warm tee shirt.
  o Wrap in 2 to 3 blankets.
Place under radiant warmer until temperature stabilizes.

Eye care
- Administer antibiotic ointment or solution in eyes as soon as possible after delivery to prevent opthalmia neonatorum.

Vitamin K administration
- Administer Vitamin K IM within one hour after delivery to prevent hemorrhagic disorders.

Umbilical cord care
- Apply clamp 1 inch from skin.
- Assess for redness or drainage with every diaper change.
- Keep cord clean and dry. Do not submerge naval until cord falls off.
- Alcohol or triple dye may be applied to cord for drying.
- Cord should fall off in ~ 14 days.

Nutrition
- Full-term infant needs 50 to 55 kcal/lb (110 to 120 kcal/kg) per day = 20 oz (600 ml) of breast milk or formula.
- At birth stomach only holds 20 ml (slightly < 1 ounce); at end of first week can hold 2-3 oz.
- Weight loss in first few days is normal, unable to meet caloric needs.
- Position head higher than stomach.
- Burp infant halfway through feeding and at end of feeding.
- American Academy of Pediatrics recommends breast feeding for one year.
- Breast milk contains easily digested nutrients and antibodies.
- Bottle feeding also provides newborn’s needs.
- Comparison of breastfeeding and bottlefeeding [corresponds to Table 43-2]

Elimination
- Voiding
  - Monitor for voiding within first few hours of delivery.
  - Bladder holds 30 to 50 ml of urine, so voids 8 to 10 times per day.
  - Wash perianal area with warm water or wipes following each void.
  - Check diapers and change frequently to keep skin dry.
- Stool
  - Monitor for stool passage within 24 hours of delivery.
  - Meconium stools will pass for 2 to 3 days, change in character. [corresponds to Figure 43-7]
  - Report failure to pass stool; could indicate congenital anomaly.

Characteristics of the Newborn
- Skin
  - Red and smooth at birth
  - Ecchymosis, petechiae, pinpoint hemorrhages after difficult delivery
  - Vernix caseosa
  - Lanugo
  - Physiologic jaundice
• Jaundice appearing within 24 hours is serious manifestation. Report immediately.
  ○ Mongolian spot
  ○ Telangiectatic nevi or stork bites
  ○ Milia
  ○ Erythema toxicum neonatorum

  ° Head
    ○ General characteristics
      ● Anterior and posterior fontanels
      ● Molding from labor
      ● Caput succedaneum
      ● Cephalhematoma
    ○ Ears
      ● Aligned with outer canthus of eye
    ○ Eyes
      ● Strabismus
      ● Small hemorrhages in sclera
    ○ Nose
      ● Patent and flattened
    ○ Lips and palate
      ● Intact
      ● Epstein's pearls

  ° Chest
    ○ Neck characteristics
      ● Short with several skin folds
    ○ Chest characteristics
      ● 12 to 13 inches (30.5 – 33 cm)
      ● Nipple engorgement
      ● Witches’ milk

  ° Abdomen
    ○ Soft without palpable masses
    ○ Umbilical cord clamped
      ● 3 blood vessels identified
    ○ Femoral pulses palpable

  ° Extremities
    ○ Extremity characteristics
      ● Symmetrical bilaterally
      ● Five digits without webbing or syndactyly
      ● Muscle tone strong with full range-of-motion
      ● Femur seated in acetabulum; no hip click

  ° Reflexes [corresponds to Figure 43-10]
    ○ Rooting reflex
    ○ Sucking reflex
    ○ Palmar grasp reflex
    ○ Plantar grasp reflex
    ○ Babinski reflex
o Stepping reflex
o Tonic neck reflex
o Moro or startle reflex

° Behavioral states:
o Sleep state
o Quiet alert
o Crying

Common Procedures
° Circumcision
  o Obtain consent for procedure.
    • Advantages and disadvantages of circumcision [corresponds to Table 43-1]
    • Cultural considerations about circumcision [corresponds to Box 43-1]
  o Restrain infant and place blanket over to prevent heat loss.
  o If Plastibell is used, no care is needed and Plastibell will fall off in 5 to 8 days.
  o If Gomco is used, apply ointment or petroleum jelly to prevent sticking to diaper.
  o Check penis for bleeding at least hourly for 12 hours.
  o If bleeding noted, apply sterile 4x4 cotton gauze and report.
  o Wash with warm water.
  o Monitor for infection until healed in 7 to 10 days.

° Immunizations [corresponds to Table 43-3]
  o Begin in second month of life
  o Hepatitis B may be given prior to discharge.
  o Obtain parental consent prior to administration.

Neonatal Conditions
° Small for gestational age
° Large for gestational age
° Drug-abusing mother
  o Infants are addicted at birth.
  o Report as soon as possible if the mother is unable to care for infant.

° Recognizing and treating anomalies
  o Anomalies appear more often in certain ethnic groups. [corresponds with Box 43-2].

Congenital Heart Defects [corresponds to Figure 43-12]
° Some may resolve; many require surgery.
° Defects with increased pulmonary blood flow
  o Patent ductus arteriosus – blood pushed from aorta to pulmonary, leads to increased blood flow to lungs
  o Atrial septal defect – blood flows straight from left to right atrium, increasing blood in right side of heart
  o Ventricular septal defect – blood flows directly from left to right ventricle.
° Defects with decreased pulmonary blood flow
  o Tetralogy of Fallot [corresponds to Figure 43-13]; four problems:
• Pulmonary stenosis
• Ventricular septal defect
• Right ventricular hypertrophy
• Overriding aorta
  o Pulmonary stenosis – narrow pulmonary valve; right ventricle enlarges as it strains to push blood through narrow valve; blood flows through septal defect into aorta and is pumped through body.
  • Cyanosis is common.
° Defects that obstruct systemic blood flow
  o Coarctation (narrowing) of the aorta; restricts blood flow to body; leads to congestive heart failure (CHF). [corresponds to Figure 43-14]
° Mixed defects
  o Transposition of the aortas [corresponds to Figure 43-15]
° Priorities in nursing care for clients with congenital heart defects:
  o Monitor for signs and symptoms of congestive heart failure.
  o Auscultate heart for murmurs.
  o Auscultate lungs every hour; report crackles or wheezes.
  o Cyanosis around the mouth (circumoral)
  o Monitor for signs of respiratory distress.
  o Evaluate for fluid retention.
  o Promote respiratory effectiveness and reduced workload.
  o Evaluate for activity intolerance.
  o Administer medications as prescribed.
  o Provide emotional support to family.
  o Reinforce teaching about condition.

Congenital Gastrointestinal Defects
° Cleft lip and palate
  o Surgical closure within first year of life
  o Complications are: feeding problems, speech problems, psychological impact
  o Nursing care for client with cleft lip or palate:
    • Maintain proper nutrition and prevent aspiration.
    • Avoid use of suction catheters, straws, and tongue blades.
    • Teach parents to deal with feeding difficulties.
    • Observe for distress during feeding and burp frequently.
    • Administer water after feedings.
    • Teach parents to clean and protect suture line.
    • Teach that child will have speech problems.
    • Provide emotional support to family in coping with unexpected event.
  o Nursing Process Care Plan: Client with a Bilateral Cleft Lip
° Tracheoesophageal fistula and esophageal atresia
  o Prevent respiratory complications.
  o Surgical repair is completed in first few days of life.
  o Gastrostomy tube may be inserted.
  o Nursing care for tracheoesophageal fistula or esophageal atresia:
• Suction for copious secretions after birth.
• Monitor for regurgitation or aspiration with feedings.
• Monitor for respiratory distress and aspiration pneumonia.
• Keep NPO for 7 to 14 days postoperatively

° Imperforate anus
  o Outer anal opening not present or not continuous with end of colon
  o Meconium in urine indicates presence of fistula
  o Surgical creation of opening

Congenital Urinary Defects
° Urethral malposition [corresponds to Figure 43-19]
  o Hypospadias
  o Epispadias
  o Surgical correction may be done in stages.
° Ambiguous genitalia
  o Chromosomal analysis may be needed to determine sex of infant.
  o Surgical correction may be needed.

Skeletal Defects
° Developmental dysplasia of the hip
  o Partial or complete dislocation of the hip
  o Manifestations: [corresponds with Box 43-3]
    • Hip click with adduction
    • Asymmetrical thigh folds
    • Uneven knee level
    • Limited hip abduction
  o Treatment
    • Three diapers to abduct hip
    • Pavlik harness [corresponds to Figure 43-20]
    • Surgical repair with hip spica cast
° Talipes (clubfoot)
  o Nonsurgical treatment with casting changed every 1-2 weeks
  o Surgical correction if casting fails to align foot

Congenital Neurologic Defects
° Spina Bifida – caused by deficiency of folic acid in genetically predisposed individual; carries high probability of other congenital defect [corresponds to Figure 43-21]
  o Meningocele - meninges herniates through defect
  o Meningomyelocele – spinal nerves and meninges herniate through defect
  o Surgical correction is completed as soon as possible.
  o Nursing care for spina bifida: observe for infection, bowel and bladder function, and movement of extremities. Provide postoperative care.
° Hydrocephalus
  o Manifestations
    • Head circumference greater than normal
    • Bulging anterior fontanel
    • “Setting sun” appearance to eyes
- Irritable or lethargic manner
  - Treatment
    - Surgical placement of ventroperitoneal shunt

Critical Thinking Care Map: Caring for an Infant with Failure to Thrive