Care of the Normal Newborn- Dr. Leya Sara Samuel

- Three-fourths of all infant deaths and 60% of all under-five deaths occur during the neonatal period in India (UNICEF, 2017).
- Essential care of newborn (ENC) practices protect the newborn from morbidity and mortality in the immediate postnatal period.
- This protocol is for well infants in the post-natal ward.

1.1. Learning Objectives

- To understand the practices that are required for normal babies.
- To have a checklist for daily monitoring and discharge of well neonates.

1.2. Admission Policy

- All neonates who are more than 34 weeks and more than 1800g and are well at birth are to be admitted by the mother's side.
- All neonates are supposed to have a separate in-patient case record that is to be maintained till both the mother and infant are discharged from the hospital.
- In case the mother is re-admitted for medical issues and the baby is with the mother, the infant needs to be admitted with a separate case-sheet.

1.3. Safe Cord Care

- The umbilical cord is a common entry point for pathogens after birth.
- Clean cord care practices prevent sepsis in the newborn especially in areas where hygiene is poor and infection rates are high.
- Cord clamping should be delayed for at least 60 seconds after birth for vigorous term and preterm newborns.
- Follow aseptic precautions while clamping and cutting the cord.
- Use a sterile clamp 2-3 cm from baby's abdomen.
- If there is oozing of blood after clamping, place a second clamp between the skin and the first clamp.
- We follow clean, dry cord care as recommended by WHO for newborns in health facilities.
- Daily application of chlorhexidine (4%) to the umbilical cord stump during the first week of life is recommended for newborns delivered in community settings with high neonatal

mortality rate (>30 per 1000) and where un-hygienic cord care practices exist (application of cow dung or ash to the cord stump).
- DO NOT apply any substance to stump.
- DO NOT bind or bandage stump.
- Leave stump uncovered.

1.4. Maintenance of Normothermia: Optimal Thermal Care

- A series of simple measures can prevent hypothermia in most neonates, starting before the baby's birth and continuing in the newborn unit, maternity ward and home.
- The steps of warm chain practiced at the time of birth is discussed in Chapter two.
- **After birth:**
    - Dry baby with a clean, dry, warm cloth.
    - Encourage skin-to-skin contact for all stable babies.
    - Encourage breastfeeding as soon as possible after birth, ideally within the first hour.
    - Postpone bathing for at least 24 hours or until after discharge.
    - The baby should be clothed adequately in the postnatal ward and at home.
    - The infant's head should be covered with a cap before wrapping.
    - Use socks and mittens for extremities.
    - A rule of thumb is that neonates need one extra layer of clothing when compared to adults.
    - Change wet nappies promptly to prevent heat loss.
    - Room in mother and baby 24 hours a day to encourage bonding and breastfeeding.
    - Kangaroo mother care is advised for all low birth weight babies.

1.5. Early Initiation of Breastfeeding

- The advantages of early breast-feeding cannot be over-emphasized.
- Refer to Chapter breast feeding for optimal position and attachment during breastfeeding.
- Encourage and implement skin-to-skin contact at birth for all stable term and late preterm neonates.
- Breastfeed on demand and during day and at night at least eight times.
- Exclusive breastfeeding for the first 6 months.
- Discourage the use of pre-lacteal feeds, gripe water, honey, or any other milk.

1.6. Protection from Infection

- Newborns – especially those born prematurely and of low birth weight are at risk of infection before, during and after birth.
- Key infection prevention practices are summarized below:

    - Optimal clean delivery behavior (six cleans as described by the WHO, including clean hands, clean perineum, clean delivery surface, clean cord cutting instrument, clean cord tying, and clean cord care).
    - Early and exclusive breastfeeding.
    - Strict hand-hygiene practices.
    - Clean practices at home- hygiene, no pre-lacteals.
    - Wash the face, neck, underarms of the neonate daily.
    - Wash the buttocks when soiled and dry thoroughly.
    - If not using diapers, use cloth on baby's bottom to collect stool. Dispose as for woman's pads.
- DO NOT bathe a baby before 24 hours of age or until after discharge.
- We do not recommend bathing of newborn infants while in hospital.
- DO NOT put anything in the baby's eyes or ears.
- At birth, both the eyes of the neonates should be cleaned with separate swabs soaked in sterile water or normal saline.
- The swipe to clean the eyes should be gentle and should be done from the inner to the outer canthus.

1.7. Physical Examination

- In asymptomatic neonates, a complete physical examination is done before discharge.
- This includes a detailed head-to-toe examination followed by systemic examination.
- Carefully examine every baby naked, in bright natural light and in absence of yellow background, for jaundice.
- We discharge babies born to O blood group or Rh-negative mothers only after 48 hours of observation, unless incompatibility is ruled out before that.
- Rule out congenital malformations.
- Check red reflex after 24 hours or at discharge.
- Check femoral pulses after 24 hours or at discharge.
- Check for dislocation of hips.
- Pulse-oximeter screening – ideally to be done at 24-36 hours of age. (See Chapter on CCHD for details on pulse oximetry screen).

1.8. Checklist for Daily Monitoring in the Post-natal Ward

- All neonates are examined once daily till discharge by the pediatric postgraduate.
- Neonates at risk of problems need to be monitored more closely (twice/thrice daily).
- The following assessments are made:
    - Address any concerns that the mother may have.
    - On the first postnatal exam, review maternal records especially ultrasound scans & blood tests (blood group, ICT, HIV, HbSAg) and ask the mother about any problems during pregnancy (polyhydramnios, hydronephrosis, any other congenital

abnormalities). (It is preferable to screen all scan records as some records may have been missed during the delivery).
    - Enquire about the health of siblings and any problems during neonatal period.
    - Enquire any maternal medications & check on LACTMED about its safety (Most medications are usually safe except chemotherapy and combinations of psychotropic drugs).
    - Urine and stool passage.
    - Vitals (temperature, HR, RR, Color, CFT), activity of the infant.
    - General physical exam – rash, umbilical discharge.
    - Weight pattern at least every 48 hours (ideally Q24H) for infants with breastfeeding problems.
    - Progression of jaundice (by Kramer's rule).
    - Breastfeeding position, attachment.
    - For infants at risk of hypoglycemia: breastmilk expression and paladai feeding.
    - Kangaroo care for eligible infants.

1.9. Newborn Screening

- Universal hearing screen is advised for all neonates.
- At JIPMER, OAE is done before discharge and if the results are REFER, a repeat test is done within 1 month of age.
- If the repeat assessment is also REFER, the infant is referred to the ENT department for a diagnostic brain stem evoked response audiometry screen (BERA) and subsequent follow-up.
- If OAE cannot be done for logistics reason, behavioral observation audiometry (BOA) is done for all well newborns by audiologist. If failed, they undergo OAE.
- Pulse oximeter screening done after 24 hours of age is a sensitive screening tool for detecting critical congenital heart defects in newborns.
- Again, due to the huge number of inborn births, it is not currently done in JIPMER but is under consideration.
- We do not routinely screen for inborn errors of metabolism (IEM) for all neonates born in JIPMER due to logistic reasons.
- Whenever feasible, we recommend screening for at least the common and treatable disorders (congenital hypothyroidism, congenital adrenal hyperplasia, G6PD deficiency, biotinidase deficiency and galactosemia).
- We do screening for congenital hypothyroidism among all high-risk neonates or if there is a history of maternal hypothyroidism or any features suggestive of hypothyroidism (like a wide anterior fontanelle).
- Similarly, all high risk or symptomatic neonates should have a metabolic screen, as symptoms of IEM mimic those of infections etc.
- For discharge planning of high-risk neonates, please refer to appropriate Chapter.

1.10. Immunization

- All neonates are given OPV, BCG and Hepatitis B vaccines at birth or within 24 hours.
- High-risk neonates are given the vaccines once they are ready for discharge and stable.
- Subsequent immunization is carried out in the Under-5 clinic, Wednesdays at 2-4 pm.

1.11. Discharge Checklist

- This checklist is an aid to ensure all necessary examinations/ procedures are completed prior to discharge.
- The mother is confident of feeding by direct feeding or paladai, and the infant has taken at least 2 successful consecutive feedings.
- Normal vital signs 12 hours prior to discharge.
- Normal urine and stooling patterns.
- Weight loss is less than 10% (cumulative) and less than 5% in 1 day.
- Jaundice is well below risk for postnatal age & gestation.
- All antenatal scan issues have been addressed (e.g. hydronephrosis: USG kidney is complete).
- The infant has completed any treatment that has been rendered (e.g. antibiotic course is completed, or stable glucose in case of asymptomatic hypoglycemia).
- TSH screening as per protocol.
- Hearing screening.
- Screening for hip dysplasia.
- Red reflex (to rule out media opacities in the eye, like cataract).
- Vaccination is complete.
- Vitamin K is given in the delivery room.

1.12. Advice on Discharge

- Exclusive breastfeeding till 6 months of age.
- DO NOT give bottle feeds, gripe water, vasambu to the baby.
- Wash hands well with soap and water before touching the baby.
- DO NOT instill oil in baby's nose/ mouth.
- Regular immunization.
- Bath may be to be every alternate day with a neutral pH soap & warm water for babies > 2500 g.
- Avoid bath in low birth weight infants till 2500 g.
- The bathing procedure needs to be as quick as possible.
- The infant needs to normothermic and is to be fed before a bath.
- Emollients like coconut oil or olive oil for massage by parent maybe used (avoid mustard oil, mineral oil (present in most baby oils).

- Danger signs: poor feeding, poor activity, seizures, hypothermia, jaundice, umbilical discharge or bleeding.
- Vitamin D3 (400 IU/ day) to be continued till 1-year of age.
- Iron (2-3 mg/kg/day) to be started at 4 months of age and continued till 2-years of age.
- Seek health care if any danger signs are noted.

1.13. Early Detection of Danger Signs

If any of the danger signs are noted, the baby should be taken to a healthcare facility immediately:

- Fast breathing (respiratory rate ≥ 60 breaths/minute).
- Severe chest in-drawing.
- Fever (temperature ≥ 38 °C).
- Hypothermia (temperature < 35.5 °C).
- No movement at all or movement only on stimulation.
- Feeding poorly or not feeding at all.
- Convulsions.
- Jaundice involving the extremities.
- Abdominal distension.
- Persisting vomiting or vomits containing blood or bile.
- At JIPMER, parents of normal neonates discharged from postnatal ward are requested to visit under- 5 clinic (Wednesday afternoon, 2 pm), Pediatrics OPD or Emergency for subsequent care.

1.14. Key Messages

- Essential newborn care includes clean cord care, thermal care, early initiation of breastfeeding within the first hour of birth and protection from infection.
- Careful assessment of the infant daily and prior to discharge helps identify and manage problems early.
- Explain danger signs to the mother prior to discharge, and how to seek help.

1.15. Suggested Reading

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