MANAGEMENT OF PREMATURITY

BY

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PREMATURITY

Live born infants delivered before 37 weeks from the 1st day of last menstrual period are termed as premature.
AIMS OF MANAGEMENT

- Proper anticipation and prevention of complications of prematurity.
- Treatment of complications.
- To ensure optimum postnatal growth of the baby.
MANAGEMENT ISSUES

Delivery room care.

Nursery care.

1. Thermal control.
2. Fluid & electrolytes balance.
3. Nutritional management.
4. Protection from infection.
5. Early detection & management of complications.
6. Dosage adjustment of drugs.
DELIVERY ROOM CARE

Every preterm delivery should be attended by a pediatrician.

Proper resuscitation at birth with,

- Adequate preparation in delivery room.
- Early stabilization of vital signs.
- Prevention of hypothermia & hypoglycemia.
- The good sized stable baby should be shifted to well baby nursery.
- Baby weighing less than 1.5kg should be shifted to NICU.
THERMAL CONTROL

The survival rate of preterm baby is higher by caring them at neutral thermal environment.

Neutral thermal environment...........it is a set of thermal conditions including air and radiating surface temperatures, relative humidity and air flow at which heat production is minimal and infant temperature is within normal range.
Maintain temperature of nursery in range of 25 to 30c.

Place the baby in incubator and keep the humidity at 70%.

Temperature of incubator varies with age.

- >2kg: 31-33c
- 1.5-2kg: 32-34c
- 1-1.5kg: 32-35c
- <1kg: 35-37c

- Temperature can also be maintained by radiant heaters and by wrapping the baby properly in cot.
Fluid needs vary according to the gestational age, environment conditions, and disease states. Preterm requires more fluid due to immature skin, loss of subcutaneous fat, and large exposed surface area.
Fluid requirement of premature baby.

1\textsuperscript{st} day 60-80ml/kg/day
2\textsuperscript{nd} day 80-100ml/kg/day
3\textsuperscript{rd} day 100-110ml/kg/day
4\textsuperscript{th} day 120-130ml/kg/day
5\textsuperscript{th} day & onwards 150-180ml/kg/day

Baby should be carefully monitored for hypo or hypernatremia, hypoglycemia, hypo & hyperkalemia & hypocalcemia.

Fluid requirements are even more in conditions like, glycosurea, renal failure and diarrhea.
Caloric requirement of preterm neonate is 110-140kcal/kg/day.

Total or partial parenteral nutrition is required for very premature & sick baby.

The goal of parenteral nutrition is to deliver sufficient calories from glucose, proteins and lipids.

The infusate should contain 2-3gms/dl of amino acids & glucose in the range of 10-15gms/dl with appropriate quantities of vitamins & minerals.
Intravenous fat emulsions such as 20% intralipid may be administered to decrease the need for high concentration of glucose. Intralipid may be initiated at 0.5gm/kg/day. TPN should be in the form of slow and continuous infusion. Complications of TPN include sepsis, metabolic complications, cholestasis & liver disease.
FEEDING

The method of feeding depends on gestational age & weight.

Neonates with >34kg with >2kg body weight with no contraindication of feeding should be started with oral feeding.

If baby cannot suck & general condition is stable tube feeding is preferred.
TUBE FEEDING

When tube feeding is used always take gastric aspirates first & then decide to feed or not.

WEIGHT <1.2KG (<30WEEKS).

- Give 0.5-1ml/hr sterile water continuously & increase by 0.5-1ml every hour until 3ml is given twice & tolerated.
- Start formula milk of breast milk 1ml/hr with gradual increase.
- When 10ml/hr is tolerated change to every 2hr feeding & advance as tolerated.
WEIGHT 1.2KG-1.5KG(<32Weeks)

- Give sterile water 2ml/kg every 2hr & if tolerated for 4hrs begin with breast or formula milk.
- Give 2ml/kg every 2hrs and increase by 1ml every feed till 15ml is given.
- Change the feeding every 3hourly for next 72hrs & then adjust according to caloric requirement.
 WEIGHT 1.5-2KG(<36weeks)

- Give 2.5ml/kg sterile water 2hourly if tolerated for 4hrs start with breast or formula milk.
- Give 2.5ml/kg every 3hrs and advance as tolerated.
Supplementation of iron & vitamins

- Vit K prophylaxis.
- Vit E in a dose of 25IU/day to babies less than 1.5kg & with prolonged illness.
- Vidayline drops 0.6ml OD.
- Iron supplementation with dose of 2mg/kg/day at the age 4-8weeks.
PROTECTION FROM INFECTION

Proper antiseptic measures in maintenance of nursery, incubator & other equipment.

All procedures should be done with strict aseptic measures.

Hand washing, cleansing of preterm baby & cord care.
EARLY DETECTION & MANAGEMENT OF COMPLICATIONS

- Good nursing care.
- Regular monitoring of vitals, activity, daily weight, input & output record & oxygen saturation.
- Immediately manage the complications as they arise.
IMMATURITY OF DRUG METABOLISM

- Interval between doses should be extended.
- Blood levels should be determined for potentially toxic drugs.
- Oxygen administration should be carefully monitored.
- Concentration of O2 more than 40% increase visual & lung toxicity
DISCHARGE CRITERIA FOR PRETERM

- A premature infant should be taking feed by nipple.
- Gaining weight properly 10-30gms/day.
- Temperature should be stabilized in an open cot.
- No recent episode of apnea or bradycardia.
Thank You