

MANAGEMENT OF HYPOTHERMIA

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1. Neonatal deaths account for over 60 percent of infant deaths. In 1992, the mortality stood at 50 per 1000 live births.

2. Around 33 percent of all Neonataes in India are Low Birth Weight (LBW), weighing less than 2500 g. of them approximately one third are pre term while the rest are growth retarded term, small for date infant. It has been estimated that 69 percent of neonatal deaths and 48 percent of infant deaths are attributable to LBW.

Much of this can be reduced by keeping baby reasonably warm. Very sick and very tiny babies need thermoneutral environment for Nursing. The essential new born care component of the C.S.S.M. Programme consists of resuscitation at birth, prevention of hypothermia, prevention of infection, exclusive breast-feeding and referral of sick newborn.

The babies with low birth weight are especially prone to hypothermia since they have less fat for insulation. It is known that babies with hypothermia are more likely to die as a result of neonatal illness than those with normal temperatures. Hypothermia is a major problem in newborn babies in the community throughout the world. It is estimated that annually 17 million neonates have hypothermia in developing countries. Hypothermia starts when the baby's temperature drops below 36.5 (97.7 F). It puts the baby at risk of respiratory problems and infection, inhibits sucking, and it can lead to oedema, sclerema, general haemorrhage, jaundice, heart problems and impaired growth.

A baby can be kept warm by reducing heat loss and/or by providing addi-

tional warmth (by means of drying, wrapping, keeping baby near mother, oil application, warmer, incubator and so on.

AT HOME

Rewarming must start immediately in the home and continue during transport to the nearest medical centre. The most effective and the safest way to do this is by skin to skin contact. The infant may also be warmed by applying clothes heated over fire or hot plate using the following procedure—two pieces of multi-layered cloth or flannel are held alternately about 5 cm over a fire or hot plate.

- Confirm that the cloth is not too hot by testing on the back of the hand.
- Then place the clothes over the chest, abdomen and head alternately, repeatedly rewarming them until the feet become pink and warm.
- Keep the other parts well covered to prevent heat loss during this process.
- The room should be kept warm in winter with the help of a heater or "angeethi" taking due precautions against carbon monoxide poisoning.
- Hot water bottles or hot stones should not be used; they may easily cause burn damage as the blood circulation in the cold skin of babies is very limited.
- The oil massage is both culturally and scientifically acceptable as it provides insulation against heat and insensible water loss.

IN THE HEALTH CENTRE

In the health centre, a diagnosis of hypothermia is confirmed by measuring the actual body temperature with a low-reading thermometer. If the temperature is 32-36°C (89.6-96.8°F) (mod-

erate hypothermia), the baby can be rewarmed by skin to skin contact : in a warm room, a warm bed, a warm bath or in an incubator. The rewarming process should be continued until the baby's temperature reaches the normal range, the temperature being monitored every 15-30 minutes.

IN THE HOSPITAL

In severe hypothermia (body temperature below 32°C or 89.6°F) there have been different opinions on process of rewarming. Some recommend slow rewarming and other calling for rapid rewarming over a few hours.

A recent review of the evidence concludes that rapid rewarming of hypothermic babies is preferable. This can be facilitated by using a thermostatically controlled heated mattress set at 37°-38°C (98.6°-100.4°F) in addition to measures to reduce heat losses. Baby needing I/V fluids should be started on 10% Dextrose and injection vitamin K should be administered while rewarming the neonate. Oxygen consumption is known to increase during rapid rewarming. Therefore oxygen may be administered at this time to avoid apnea due to hypoxemia. The importance of early breast-feeding needs to be emphasized so that adequate fluid intake will compensate for the vasodilation that occurs also to meet energy needs.

If there is only an air-heated incubator available the air temperature should be set at 35-36°C (95-96.8°F) and the body temperature of the baby checked frequently, at least every 30 minutes.

Once the baby temperature reaches 34°C (93.2°F), the rewarming process should be slowed down to avoid over heating.



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Warm Chain:

The "Warm Chain" is a concept introduced to describe a set of inter-linked procedures, which will minimize the likelihood of the development of hypothermia. Failure to implement any one procedure of these will break the chain and increase the possibility of undesirable cooling of the infant.

The links in the "warm chain" include-

- Training all persons involved in the birth and subsequent care of the baby.
- Preparation of the place of delivery by ensuring a clean, warm, draught free room, clean and safe delivery practices require, clean hands, cord-cutting instruments and ties, a clean surface, drying and wrapping materials.
- Immediate drying of the newborn baby.
- Wrapping the baby and giving it to the mother quickly after birth.
- Putting the baby to the mother's breast.
- Putting a warm cap on the baby's head.
- Covering the baby and the mother together.
- Ensuring warm, safe transport, if necessary.

References :

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3. Ministry of Health & Family Welfare, Government of India. Module For Health Workers, 1992.



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