Incubator Care And Neonatal Monitorirg

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The high risk infants are particularly dependant on the physician to provide the ideal ”external milieu” in order to ensure optimal neurologic and physical development. Undoubtedly, the skilfull application of new techniques in respiratory and nutritional support has made considerable contribution. Increased awareness of and responsiveness to the nature and special environmental requirements of very preterm infants contribute to the improvement. Current policy is to nurse the preterm infants in incubators or under radiant warmers. The aim is to provide an appropriate ambient temperature and humidity while protecting the infant from infection and other environmental hazards.Control of environmental temperature is important for survival of low birth weight infants. The optimal ambient temperature at which the infant should be nursed is called the neutral thermal temperature. The thermoneutral temperature is generally defined as ”the range of environmental temperature within which the oxygen consumption is minimal”. Within this range, the body temperature can be kept normal by changes in skin blood flow, without sweating. Several guidelines for the neutral thermal temperature have been reported for different birth-weights and postnatal ages. Recently the neutral thermal temperature for premature infants has been. redefined as ”the ambient temperature at which the rectal temperature of the infant at rest is between 36.7 and 37.3°c and therectal and mean skin temperatures are changing less than 0.2 and 0.3°C/hour respectively”. Using this definition, new guidelines of neutral temperature have been made for healthy infants of 29-35 weeks gestation from the first day of life to 35 days of life. The most commonly used heating device of the nude infant is an incubator with a signle plastic wall, where the infant is heated by convection. Radiant heat panels placed above the infant without a complete enclosure have been used. It is useful in short warming in the delivery room and in infants undergoing procedures (e.g. exchange transfusion).Regulation of the heat output in the infant incubators is done either by manual control, skin temperature servo control, and air temperature servocontrol. In healthy preterm infants, when the incubator wall temperature is stable air temperature servo-control, skin temperature servocontrol and manual control are equally effective to operate infants incubators. In situations where there are large changes in environmental temperature that alter the incubator wall temperature and hence, the air temperature required for thermoneutrality, the skin temperature servocontrol should probably be used.In sick very low birth-weight infants during the first few days of life, air mode control is the better method of temperature control. When the infants of less than 30 week’s gestation are nursed in incubators, humidity should

be used since it greatly improves the control of body temperature. Humidification should be stopped after a few days (four to seven days) of life, because maturation of the epidermal barrier is rapid in the premature infants. To avoid bacterial contamination of the humidifier reservoir, the water must be drained each day, the incubator run dry for an hour and the reservoir refilled with sterile water. It is not necessary to humidity incubators when nursing older or more mature infants unless their body temperature cannot be kept within the normal range. Cot nursing is an alternative approach to care for the infant dressed rather than naked and is less costly. The sensory stimuli may play a major role in neurologic and physical maturation and may be specially crucial in furthering the organization of many higher order processes. The sensory stimulation must be appropriate to the infant's state of development and to the infant's individual requirements. The sensory stimuli must optimize both the immediate and ultimate neurologic and physical development. Optimal nutrition is critical in the management of the over-increasing number of surviving small premature infants. Although the most appropriate goal of nutrition of low birth-weight infants is not definitively known, achieving a postnatal growth that approximates the in utero growth of a normal fetus at the same postconception age apears to be the most logical approach at present.