Hot topics from the web

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Neonatal-talk (www.infantgrapevine.co.uk) and NICU-NET (www.neonatology.org/nicu-net/join.html) are two of the many websites devoted to the exchange of information between staff involved in the care of neonates and infants, and the following are just a few of the new and on-going topics discussed. The opinions expressed do not claim to be evidence-based but will hopefully promote further discussion.

Temperature probes
NICU-NET

An Advanced Nursing Education Specialist from Florida wanted to know if the axilla was the optimal spot to place a probe when using the Giraffe OmniBed™ and whether it was necessary to use a probe cover. The replies, mostly from the USA, were varied. One respondee said using a probe cover follows the manufacturer's instructions. Without it enough heat may not be generated to maintain the infant's temperature. Correct placement was over the liver as long as the infant does not lie on it. But a nurse from Switzerland disagreed with placement over the liver due to heat generating reactions. If the probe is over a site that potentially contains brown fat – i.e. the axilla, it will sense more heat and the infant could become cold. Another respondee agreed that placing the probe in the 'bony' axilla could do damage to the tissues. A further response was why do we take temperatures in the axilla – if we do not place the probe there? And a nurse from Australia covered the probe with Duoderm™ but found that when the infant raised his arm the temperature was lowered and the incubator temperature was thus increased. The problems with placing the probe on the back or abdomen were limited position changes. The use of two probes was mentioned as a possibility, but nurses then forget to switch position!

Comment

Care must be taken when using an incubator in servo-control mode, where the incubator heater is automatically adjusted to maintain a set infant temperature rather than a set air temperature. The temperature probe must be securely attached and sited in an appropriate position. Older incubators using this mode suffered from wider temperature fluctuations than when using air mode, with poorer outcomes for the babies nursed inside them[1], but newer technology may have overcome this problem. For the Giraffe OmniBed™, which can instantly be switched between open (radiant warmer) and closed incubator configurations, infant servo control mode is probably preferable, as this should manage the changeover between configurations with less fluctuation in infant temperature. The temperature probe must be covered with a reflective sticker, especially when in radiant warmer mode, to prevent the probe being directly heated by the heater and thus reading a falsely high infant temperature. The probe should ideally be sited away from any bony prominence, which may underestimate the infant's temperature, and is usually sited on the abdomen or lower back depending on whether the baby is supine or prone. It is also helpful to measure a peripheral temperature, as any large (> 2°C) difference between central and peripheral temperatures is usually due to cold stress, although hypovolaemia and infection may also be implicated[2].

1. **Lyon A.** Applied physiology: Temperature control in the newborn infant. *Curr Paediatrics* 2006; **16**: 386-92.
2. **Lyon A.J. et al.** Temperature control in infants less than 1000 g birthweight in the first 5 days of life. *Arch Dis Child* 1997; **76**: F47-50.

Measuring aspirates with continuous gavage feeding
NICU-NET

An interesting discussion followed a question from a doctor in Baltimore. He wanted to know about measuring aspirates – whether it be with routine cares or with 'one hour off' every few hours, and measuring before recommencing the feed. Most of the replies were from the States – and measured the amount of gastric residue every four hours – one unit saying they left the feed off for an hour. One (American) unit did not check the aspirate but measured the abdominal girth and checked the clinical condition of the infant. They explained that VLBW babies have slow gastric emptying and some even have reverse peristalsis – and will have quite large aspirates.

Comment

Measurement of gastric residuals prior to bolus feeds is common practice. It is considered to be an objective assessment of feed tolerance, and large residuals are included in the definition of stage 1 necrotising enterocolitis[1]. Routine measurement of gastric residuals has not been shown to improve outcome, however, and there is no universally accepted definition of an excessive gastric residual volume[2]. The potential advantages of bolus nasogastric feeding over continuous feeding were discussed in the March 2007 Hot Topics page. Some units do use continuous feeding in selected cases and this gives rise to the question of whether or when gastric residual volumes should be measured. Unfortunately there is no evidence base to guide practice here – one trial of continuous vs. bolus feeding used "more than 2 hours volume of feeding at any time" as a definition of excessive gastric residual, but no rationale was given for this choice of definition, and there is no reason to propose this as good practice[3].

1. **Bell M.J. et al.** Neonatal necrotizing enterocolitis: Therapeutic decisions based upon clinical staging. *Ann Surg* 1978; **187**: 1-7.
2. **Mihatsch W.A. et al.** The significance of gastric residuals in the early enteral feeding advancement of ELBW infants. *Pediatrics* 2002; **109**: 457-59.
3. **Silvestre M.A.A. et al.** A prospective randomized trial comparing continuous versus intermittent feeding methods in VLBW neonates. *J Pediatr* 1996; **128**: 748-52.