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 just 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 many new and on-going topics. The opinions expressed do not claim to be evidence- based but will hopefully promote further discussion.

Neopuff™
NICU NET

A question from Richmond, Virginia enquired about the use of the Neopuff™ resuscitation device as they were considering using it within their unit and wondered if there were any drawbacks to the system. The Neopuff™ design is simple and it is easy to use, either with a mask or when attached to an endotracheal tube. It is a flow-driven neonatal resuscitation device where peak (PIP) and end-expiratory pressures (PEEP) are preset by the user, and inflations delivered by occluding the T-piece with a finger or thumb. The vast majority of the many responses were in favour of Neopuff™ and various advantages were suggested. It may reduce the lung injury that could be associated with the more conventional 'bagging', especially if the latter is performed by 'less experienced' personnel, and can be used to ventilate a baby until the transport team arrives. One British respondee indicated the need for a different way of titrating the PIP – with the self-inflating bag he used chest movement/ 'feel'/clinical response – but with the Neopuff™ he used just chest movement plus clinical response. He also added that the process takes a bit longer and demands more conscious thought. This is a good thing and any new system requires the need for change and education; and is only as good as the driver.

A couple of negative comments suggested that the equipment was not easy to move, but other units responded to this by saying they have their's fixed to each bedside and/or incorporated within the Resuscitaire; with an additional unit which could be attached to an oxygen cylinder for transport to theatre or CT scanning.

Comments

Many neonatal units in the UK and elsewhere are now using the Neopuff™ device instead of the more traditional self-inflating bag[1]. Advantages over the self-inflating bag are that adjustable levels of PIP and PEEP can be administered more accurately[2], and that longer inspiratory times can be applied if required. As with a self-inflating bag, the Neopuff™ can be attached to an adjustable blended supply of air and oxygen, to avoid the potential adverse effects of hyperoxia during resuscitation.

1. **O'Donnell, C.P.F., Davis, P.G., Morley, C.J.** Positive pressure ventilation at neonatal resuscitation: Review of equipment and international survey of practice. *Acta Paediatrica* 2004; **93**: 583-88.
2. **Hussey, S.G., Ryan, C.A., Murphy, B.P.** Comparison of three manual ventilation devices using an intubated mannequin. *Arch Dis Child* 2004; **89**: F490-493.

Patent ductus arteriosus ligation
NICU NET

From Memphis came a question asking where other units were performing this procedure. They were keen to avoid transporting their babies out for surgery and/or using multiple courses of indomethacin. The majority of the many replies were also from America and all performed on-site ligations; either at the bedside or in a side-room, and either with their own staff or a visiting team. No adverse effects were reported and the plus side was less stress to the infant associated with transport. However, replies from Australia, the UK and India doubted whether we should actually be doing ligations and asked for the evidence that this procedure was beneficial.

Comments

There is no conclusive evidence regarding the benefit of PDA ligation in premature infants. There certainly seems to be no advantage in choosing surgical ligation as the primary method of duct closure, unless indomethacin or ibuprofen are specifically contraindicated[1]. Most UK neonatal units arrange for surgical closure if the duct remains haemodynamically significant and symptomatic after one or more courses of indomethacin. Surgical ligation on the neonatal unit is performed in some UK neonatal units, and appears to be common practice in the USA. Issues relating to clinical governance and consultant contractual arrangements usually prevent UK cardiothoracic surgeons from performing this procedure away from the centre in which they are based, although an American study suggests that this is a safe practice[2].

1. **Knight, D.B.** The treatment of patent ductus arteriosus in preterm infants. A review and overview of randomized trials. *Semin Neonatol* 2001; **6**: 63-73.
2. **Gould, D.S.G, Montenegro, L.M., Gaynor, J.W. et al.** A comparison of on-site and off-site patent ductus arteriosus ligation in premature infants. *Pediatrics* 2003; **112**: 1298-301.

Music in the NICU
neonatal-talk

A couple of questioners wondered what other units were doing to decrease noise levels within the NICU, with particular reference to nurses playing radios/CDs. None of the replies supported this practice for preterm infants. One respondee stipulated that a unit should be 'quiet enough for a baby to hear his/her parent's voice', although this seldom happened. The majority of replies thought that music was not appropriate to the developing preterm brain – which *in utero* was subjected to about 40 decibels (whereas a radio was about 65 decibels). Most units appeared to use music therapy for older infants/surgical babies in open cribs with the proviso that their behavioural responses were monitored to make sure it was having the desired effect. There was a strong message throughout the replies that music should NOT be for the nurses' benefit and as such was noise pollution.