



# infant

for neonatal and paediatric  
healthcare professionals

## Early care of the newborn infant – BAPM guidelines

In 1998, the British Association of Perinatal Medicine (BAPM) produced a guideline on the management of respiratory distress syndrome. The guideline expired in 2002. The Association has now undertaken a review of the evidence for current practices of early care of the newborn infant<sup>1</sup>. The subject was divided into a number of topic areas. These include resuscitation, respiratory support, intensive care monitoring, nutrition, place of delivery and follow-up. Each topic was reviewed by a multidisciplinary group, who undertook a comprehensive literature search and consulted experts. The groups then produced a statement about the current practices, in particular identifying the level of evidence (grade A, B, C or D) to support any recommendations made. Grade A evidence was from at least one high quality meta analysis or randomised controlled trial, whereas grade D was based on case reports and/or expert opinion alone. The statements produced by the groups were then shared with the BAPM membership, whose comments were taken into consideration when drawing up the final document.

It is noted in the document that where there is strong evidence (grade A and possibly B) then it would be expected that this would influence practice, yet does it? To answer this question, I have concentrated on the area of respiratory support, not least because this is an area which I have thought important in all my years as a neonatologist and I was the lead for this topic group. However in addition, there have been many randomised trials comparing various respiratory support strategies and numerous systematic reviews and meta-analyses. Hence, the evidence given to support the statement

“current data have not established any alternative mode of ventilation as preferable to time cycled pressure limited (“conventional”) ventilation in the management of RDS, this includes comparison with volume controlled ventilation, triggered ventilation and high frequency oscillatory ventilation”

is graded as A or B. Yet our survey of neonatal units demonstrated that all four modes of ventilation are being used, presumably reflecting a failure of the trials to demonstrate a clear winner. So how then are practitioners making their choice? It is also stated that

“there is no evidence, from trials done during a period of time when the use of antenatal steroids and surfactant has been at a high level, that early use of CPAP compared to intubation and ventilation is associated with a reduction in the duration of mechanical ventilation”,

but many practitioners state that they prefer CPAP, a “gentler” form of respiratory support. Such comments imply positive results and undoubtedly there have been impressive reductions quoted in the need for intubation and ventilation and the BPD rate, but not from studies which qualify as grade A evidence. Does it matter, given a lack of evidence to suggest harm by a particular respiratory technique, which we choose? One obvious drawback is that if there are no good data on relative efficacy, then practitioners may, and have, made different decisions, exposing trainees to a steep learning curve each time they move to a new unit. We do then need further good evidence, randomised trials with long term follow-up and outcomes. If we do not assess techniques adequately, then we may deny our patients the chance of optimum treatment.

In many of the areas covered by the statement, there is only evidence at grade C or even D and it is stated that in such circumstances individual units need to develop their own local consensus view about management. A solution to such a dilemma is further research, but I would suggest that policies in certain areas with only grade C or D evidence can be informed by common sense. For example, would we not all agree that

“an intermediate grade staff and/or a consultant paediatrician, in addition to a junior staff member, should be present for the delivery of an extreme preterm infant (that is less than 28 weeks of gestation)”, “those without training and expertise, who may be faced with an unexpected emergency, should have a clear action plan to call for help”

and

“it is good practice during the acute phase of RDS to monitor the baby’s vital signs, blood biochemistry and haematological profile on a regular basis” ?

Another area in which I would suggest the recommendations, regardless of the lack of

evidence, should be taken as given, is follow-up. I certainly endorse that

“each unit should have a protocol for follow-up of children defined as at high risk of adverse neuro-developmental outcome and have arrangements for close liaison with child development teams in the locality”.

Although, taking such policies as given, I would stress this does not preclude research. For example, again all would accept that

“good infection control procedures, in particular hand washing and use of alcohol rub between patients, should be routine”;

but further studies to identify the most effective infection control would be welcome.

In other areas, the format of the Statement importantly emphasises the evidence available is very limited. In certain areas this is because, although good quality research has been undertaken, only short term outcomes have been addressed. For example, studies have demonstrated that dopamine is more effective than volume or dobutamine in raising blood pressure, but

“in infants with RDS, however, there remains controversy over the effect on outcome of treating hypotension”.

Similarly, suctioning of the endotracheal tube with a closed system has been shown to be associated with reduced hypoxia and a reduced fall in heart rate, but the longer term effects of this practice have not been investigated. Resuscitation also remains an under investigated area. The resuscitation group reported

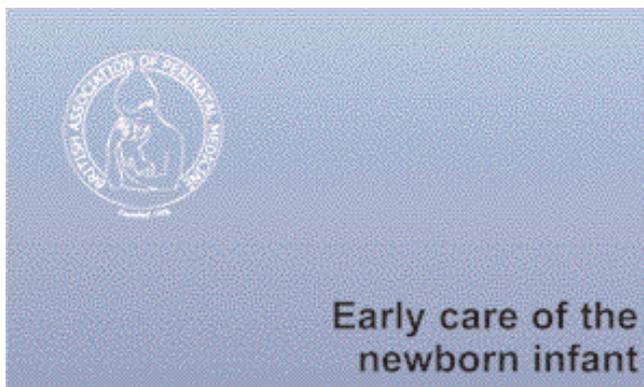
“they were of the opinion that current evidence does not support routine intubation of all preterm infants”;

but this begs the question – ‘Which prematurely born infants would benefit?’

Whereas, none of us would intubate a 36 week gestational age infant who was making vigorous respiratory efforts immediately after birth, what is best for the 26 week gestation infant? The resuscitation group further note that

“there is good evidence from trials in term infants that air should be the first choice at resuscitation and it was the consensus view of the group that resuscitation should be started with air followed by oxygen, in increasing amounts, for newborns who do not respond (by an increase in heart rate) to lung inflation”.

Again, there are questions which need to be answered – ‘How quickly should the supplementary oxygen be increased?’ and importantly, ‘Will the same policies be



Statement on current level of evidence



appropriate for the preterm infant?’ Increasingly, equipment is available which allows the addition of PEEP at resuscitation, yet the resuscitation group were only able to report

“where appropriate equipment is available, there is evidence, from animal studies only, that a PEEP of at least 5 cmH<sub>2</sub>O should be used during resuscitation of preterm babies”.

We need studies appropriately assessing PEEP levels in preterm babies.

In conclusion, the BAPM Statement is welcome. It provides an updated review of early newborn care practices. The format emphasises which practices are based on good evidence and importantly, where this is lacking, hopefully causing practitioners to question what has informed their local policies.

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## Reference

1. Early care of the newborn infant - British Association of Perinatal Medicine statement on current level of evidence (2005). [www.bapm.org/publications](http://www.bapm.org/publications)