Effects of altitude on endotracheal tube cuff pressures

In regard to the article by Mann et al., the issue of endotracheal tube (ETT) cuff inflation in response to reduced barometric pressure at altitude has been recognised for a long time. The most recent study published in 2004 used pressure transducers to examine the effects in vivo. The pressure effects of altitude on cuff volume are predicted by Boyle’s law, which states that a fixed mass of gas will expand as ambient pressure decreases. If there is no method of venting this expansion, there will be an increase in pressure within any air filled space. Accordingly a number of authorities recommend the use of saline (incompressible) rather than air in ETT cuffs for aeromedical transport of intubated patients. This avoids the problems of gas expansion and contraction in response to changes in barometric pressure and/or the use of a relatively complex formula for deflation on ascent and re-inflation on descent.

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REFERENCES

Clinical signs of dehydration in children

The recent Best Evidence topic report article by Fayomi clearly illustrates the dangers of too narrow a focus when practising evidence based medicine. Firstly, the search strategy is too narrow, as three papers14 which have studied this have been missed. All of these papers found tissue turgor time to be closely associated with the presence of dehydration, while the paper cited by Gorelick et al1 found this sign to be very specific, but of low sensitivity. Secondly, the focus of the question is too narrow. A number of studies, including Gorelick et al., has revealed that combinations of clinical findings traditionally associated with dehydration greatly enhanced accuracy, sensitivity and specificity.16,17 Accuracy, sensitivity and specificity figures of over 80% have been published, with combinations of clinical signs.1

In addition, some of these papers have demonstrated improvements in clinical care of the dehydrated patients with the use of scoring systems for dehydration based on combinations of clinical signs.

Many of the clinical signs of dehydration individually have high specificity, but low sensitivity. Combinations of signs are more accurate, especially when used by experienced clinicians, and are probably more accurate for lower levels of dehydration than classically taught. There is a tendency therefore to overestimate the level of dehydration, and this can lead to over treatment. However, there is an absence of any useful proven prospective diagnostic tools, and clinical examination is therefore still an acceptable method for determining treatment.

The usefulness of the Best Evidence topic reports have been debated in the correspondence section of this journal on previous occasions; like all medical literature, interpretation and implementation should be considered with caution, especially with regard to a wider, more drastic perspective.

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REFERENCES

Debriefing

In the article by Doy et al reference is made to “critical incident stress debriefing”. It was suggested there was some disagreement as to its effectiveness, but nevertheless the article appeared to be recommending its use. I would, however, refer readers to the National Institute for Health and Clinical Excellence guidelines on post-traumatic stress disorder (www.nice.org.uk). These guidelines state that for individuals who have experienced a traumatic event, the systematic provision to that individual alone of brief, single session interventions (often referred to as debriefing) which focus on the traumatic incident should (not their bold type) be routine practice when delivering services.

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CORRECTIONS

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In the short report, Airway scope management versus Macintosh laryngoscope: a manikin study (Emerg Med J 2007;24:357–358), figure 1C is incorrect. Please find the correct figure 1C below. The journal apologises for this error.

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