# EXTRACTS FROM THE JOURNALS

Dr Henk Haisma, University Hospital Groningen, PO Box 30001, 9700 RB Groningen

email H.J.Haisma@anest.azg.nl

**Fluid Resuscitation With Colloid or Crystalloid Solutions**

Fluid resuscitation of critically ill patients is a subject of considerable debate. Currently there is much interest in the result of a recent meta-analysis which suggests that colloid therapy for hypovolaemia is associated with an increased risk of death when compared with crystalloid.(1)

The purpose of this paper was to identify all available unconfounded evidence of the effect on mortality in critically ill patients of colloid compared with crystalloids for volume replacement. The authors studied 37 trials of fluid resuscitation in critically ill patients but based their analysis on the 19 trials (with 1315 participants) which reported mortality.

The paper discusses that for decades there has been controversy over the relative benefits of colloid and crystalloid solutions for fluid resucitation of hypovolaemic patients. In this review of randomised controlled trials the use of colloids compared with crystalloids was associated with an increase in absolute risk of mortality of 4%. There was no evidence that different types of injury necessitating fluid resuscitation had different findings. Although more expensive than crystalloids, use of colloids far exceeds current recommendations

Following publication of this meta-analysis considerable debate has been published from both supporters of crystalloid resuscitation and colloid users. It is difficult to know how to apply these findings at present.

Conditions in many parts of the developing world means that the choice of intravenous fluids is often limited. It is of interest that this analysis could show no benefit for the more expensive, and often fashionable, colloids.

Although there is still doubt about the optimal type of fluid replacement in hypovolaemic shock, it is well recognised that adequate volumes of intravenous fluid are required. Evidence for the safety of each type of fluid will need more work, particularly in the different groups of patients such as trauma, sepsis, anaphylaxis, cardiac etc and the different types of fluid available.

1. *Schierhout G, Roberts I. Fluid resuscitation with colloid or crystalloid solutions in critically ill patients: a systematic review of randomised trials. BMJ 1998; 316:961-964.*

**Pain experienced by infants**

The study of pain in children has developed dramatically in the past 10 years. Although anaesthetists have been responsible for much of the research and the increase in public and professional awareness of the problem, surgeons, nurses and parents have also been the driving force for change in many places.

The key to successful prevention and treatment of pain in children rests in reliable measurement techniques. Facial expression scoring, cry duration and visual analogue scale scores are used as research tools for pain measurement. Facial expressions of pain following an injection are brow lowering, eyes closure, deepened nasolabial furrows and mouth opening. These signs are consistently seen from 2 to 18 months of age. (1)

The effect of neonatal circumcision on pain response during subsequent routine vaccination was studied by Anna Taddio and her colleagues from the Hospital of Sick Children in Toronto (2). Patients who had undergone neonatal circumcision showed a more marked pain response to subsequent routine vaccination than uncircumcised infants. The application of the topical local anaesthetic EMLA during circumcision reduced the pain of circumcision but had little effect during tightening the clamp on the foreskin. However during subsequent vaccination there was a significant trend for EMLA treated infants to have an intermediate (compared with uncircumcised infants and circumcised without EMLA application) pain response across all the three (facial action, cry duration and V.A.S. scores) measurements of pain.

These papers add to the considerable evidence already available that even very small children experience pain which may be clinically detected and, to an extent quantified. Effective methods of controlling pain in this group of patients should be the subject of further research. Study of the vaccination pain response of infants who received more effective and more available circumcision pain management ( like dorsal penile nerve block or caudal block) would be interesting.

*1. Lilley CM, Craig KD, Grunau RE. The expression of pain in infants and toddlers: developmental changes in facial action. Pain 1997; 72:161-170*

*2. Taddio A, Katz J, Ilersich AL, Koren G. Eff ect of neonatal circumcision on pain response during subsequent routine vaccination.Lancet 1997; 349:599-603*