

EXTRACTS FROM THE JOURNALS

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Pulmonary Artery Catheterization.

Over the past decade, there has been vigorous debate concerning the indication for, and clinical utility of, the Pulmonary Artery Catheter (PAC). Recently, Connors et al.(1) reported an observational study of PAC use conducted in five teaching hospitals in the United States between 1989 and 1994. In this study, the PAC was associated with both increased mortality and utilisation of resources when compared with case-matched control patients who did not undergo pulmonary artery catheterisation. Despite the paper's shortcomings (not prospective, nor randomised, nor a controlled trial) it served as a catalyst to again intensify heated debate over the use of the PAC in the critically ill patient. Complications directly associated with the catheter itself does not seem to cause the problems but incorrectly collected haemodynamic data may lead to improper therapeutic strategies. Another factor is the documented significant interobserver variability in interpretation of pulmonary artery pressure tracings. Modification of care that PACs seem to provoke, like increasing the use of vasopressors, inotropes and intensity of care, may, at times do more harm than good. Also, disturbing evidence exists suggesting that knowledge of basic principles of pulmonary artery catheterization by physicians and nurses engaged in routine use of these devices is suboptimal.

The study of Connors et al. led to a consensus conference that recommended guidelines for the use of the PAC (2). Some of the final recommendations, which reflect the collective opinion of the participants, are:

- Clinicians should continue to carefully weigh the risks and benefits of the PAC.
- Clinician knowledge about the use of the PAC and its complications should be improved.
- The indications and contraindications for PAC use, where clinical evidence is lacking, should be determined.

To summarise, most clinicians believe that the PAC is useful in guiding intravascular volume expansion and pharmacological intervention in selected critically ill patients, however finding clear evidence to substantiate this belief is difficult, despite 25 years of PAC use!

1. Connors Jr AF, Speroff T, Dawson NV, Thomas C, Harrell Jr FE, Wagner D, et al. The effectiveness of right heart catheterization in the initial care of critically ill patients. *JAMA* 1996;276:889-897

2. Pulmonary Artery Catheter Consensus Conference Participants. Pulmonary artery catheter consensus conference: consensus statement. *Crit Care Med* 1997;25:910-925

Management of Dural Puncture

Unintended dural punctures continue to occur during the attempted insertion of epidural needles. Berger et al. (1) reported in a survey of 46 North American tertiary care obstetric centres on the management of dural punctures occurring with epidural analgesia during labour. The incidence of inadvertant dural puncture was 0.4%-6%. Following accidental dural puncture, 86% of patients experienced headache, in 63% of these patients it was severe.

Resiting the epidural catheter at another level was the most common initial step (90%) after dural puncture. If another epidural catheter was successfully placed, most centres used their standard top up or infusion regimes. Some centres (mainly in the USA) considered continuous intrathecal catheters as an alternative if the epidural catheter proved difficult to place.

Following delivery 86% of centres allowed unrestricted mobilisation. If headache occurred lying in bed was found to be useful for pain relief.

Enhanced hydration, either orally or intravenously, to increase CSF production, has not been shown to decrease the risk of headache, but may lessen its severity. The beneficial effects of caffeine are transient in many patients. 17% of centres employed epidural saline boluses or infusions.

Prophylactic epidural blood patch (EBP) was recommended by 37% of centres, with twice as many US as Canadian centres doing so. The EBP is still the most efficacious treatment for a post dural puncture headache with a reported success rate of greater than 90%. The resolution of symptoms are thought to be caused by an increase in CSF pressure from the injection of an epidural blood volume and formation of a clot at the site of the dural hole that seals and prevents further CSF leakage.

1 Berger CW, Crosby ET, Groeckl W. North American survey of the management of dural puncture occurring during labour epidural analgesia. *Can J Anaesth* 1998; 45: 110-114