Pain after injection of methohexitone

We assessed the high incidence of pain after injection of methohexitone while conducting recent studies in out-patients using methohexitone and alfentanil. We tried a combination of two methods of solution of methohexitone after reports that the use of normal saline rather than water reduced the incidence of pain from 42% to 16%, and that pretreatment with lignocaine 10 mg reduced the incidence from 64% to 16%.

Fifty successive unpremedicated patients for out-patient gynaecological surgery received either methohexitone dissolved in normal saline or water on a double blind random basis through a 23G Butterfly (Abbott) in the back of the hand. Spontaneous expressions of pain, withdrawal of the hand or wincing were classified as a painful response. Thirty (52%) of those receiving the aqueous solution complained of pain and 16 (64%) of those in the saline group.

The next 100 successive patients also received either methohexitone in saline or water, but were all pretreated with lignocaine 10 mg. Twenty-four percent of the aqueous group and 28% of the saline group complained of pain.

The incidence of pain following injection of methohexitone has been reported from between 60% and 10%, and is higher in unpremedicated, vasoconstricted patients receiving the injection into a small vein.

Numerous methods to reduce the incidence have been advocated, none with any convincing success. We have failed to show any significant improvement when dissolving methohexitone in saline, and despite a lower overall significant improvement when pretreating with lignocaine, the final incidence is still higher. This means that more than one in four patients will experience moderate to severe pain after injection of the methohexitone.

There is no clear alternative to methohexitone at present, because of its safety record and short duration of action. We suggest that the only method definitely to reduce the incidence of pain is to site the intravenous needle in a large vein in the forearm.

Buprenorphine, benzodiazepines and respiratory depression

Prolonged somnolence and ventilatory depression following the use of lorazepam and buprenorphine reported by Dr Papworth (Anaesthesia 1983; 38:163) and Dr Forrest (Anaesthesia 1983; 38:598) are similar to our experience, during a double-blind, randomised study of buprenorphine and fentanyl during anaesthesia.

Eighty-eight patients in our study undergoing elective surgery were premedicated orally with diazepam 200 ug/kg. Anaesthesia was induced with either buprenorphine 3 ug/kg (n = 37), buprenorphine 2ug/kg (n = 27) or fentanyl 1.5 ug/kg (n = 24) followed by thiopentone 5 ug/kg, nitrous oxide and pancuronium. Increments of anaesthetic were given during surgery in response to changes in heart rate, blood pressure and of a score of clinical signs of anaesthesia. In the case of the pooled groups of patients receiving buprenorphine the mean increment was 0.07 ug/kg/h.

Sixty-nine patients did not also require a volatile agent but, following adequate reversal of muscle paralysis and satisfactory spontaneous breathing for 5 or more minutes, 11 of them suddenly suffered respiratory depression requiring manual ventilation of their lungs followed by doxapram infusion to reverse and prevent cyanosis. All of these patients had received buprenorphine and comparison of the pooled groups of patients receiving buprenorphine with those receiving fentanyl (who were not so affected) showed the phenomenon to be significant (p < 0.05).

Other workers have used pre-operative benzodiazepines and per- or postoperative buprenorphine without untoward effect.1-2 but respiratory depression is not surprising. For postoperative pain Gibbs et al.3 used intravenous buprenorphine and reported ventilatory depression, as did Cook et al.4 following intramuscular buprenorphine but not after intramuscular morphine administration. The latter workers suggested synergism with peroperative fentanyl or phenoperidine. Perusal of both these reports suggests that all subjects who had ventilatory depression had also received either lorazepam or diazepam as premedication, both of which may be expected to reduce respiratory drive, the latter in doses similar to those used in premedication.1

Finally McQuay and his colleagues attribute, in their case,4 ventilatory depression to increased concentration of opiates at receptor level precipitated by initial postoperative respiratory acidosis, increasing active buprenorphine released from tissue proteins. Their patient also received diazepam as premedication.

We have abandoned this technique.
Anaesthesia and intensive care. One hat or two?

As an anaesthetist and an intensivist, I regard Dr Gilston’s Editorial on anaesthesia and intensive care, as erudite and timely (Anaesthesia 1983; 38: 211–2). It is disappointing, however, to note the perpetuation of the myth enshrined in recent writings¹ regarding ‘the impossibility of one person being an expert in every field of acute medicine’. This argument is extended to imply that specialisation in intensive care is impossible. Which other medical specialist is required, or is remotely expected, to be an expert in every aspect of his chosen field?

What is required is a logical and comprehensive approach to patient diagnosis and care, and an ability to effect immediately appropriate therapeutic measures. This needs to be coupled with an awareness of reference sources and a capacity to consult intelligently. I fail to see why intensive care medicine should be peculiarly different from other disciplines in these respects.

Perhaps the genesis of the propounded viewpoint is betrayed elsewhere in the editorial. The ‘virtual absence of a career structure for the aspiring specialist’ bespeaks a vacuum—not merely with regard to the regulated availability of specialists, but equally importantly in that a vocational educational system, which would favour the evolution of coherent thought and crystallisation of priorities within the discipline, does not exist.

I am pleased that a joint committee of the Royal Colleges, the Faculty of Anaesthetists, and the Intensive Care Society, is to address this problem. It may be noteworthy, however, that a similar attempt some years ago in Australia, failed to come to fruition, the Faculty of Anaesthetists eventually feeling constrained to institute its own regulated training scheme and diploma examination.² ³ ⁴

Regarding the inertial resistance to change mentioned in the editorial, I suspect that the Joint Committee for higher professional training (HPT) of anaesthetists is culpable in so far as they will not recognise time spent in vocational intensive care training (personal experience). Perhaps the fact that this sort of training almost necessarily must be obtained outside the UK and Ireland is a stumbling block. However, this obstacle is not likely to change until the present UK intensive care ethos of ‘one-man super units’ or ‘no-man shambolic units’ has passed and an adequate staffing level at consultant and junior level has been effected. Sensible staffing should also help to preclude the ICU ‘burn out’ phenomenon about which concern was expressed.

It is difficult to reconcile the willingness of the HPT Committee to sanction a year of research and yet regard time spent in full-time clinical recognised intensive care training as non-contributory to the development of the skill and attitudes becoming of a consultant. I suspect I know which experience would be the more valuable to the everyday practice of most anaesthetists.

I obviously agree that the development of facilities for intensive care training in Britain and Ireland will require changes in attitudes. Experience elsewhere shows that the challenges and excitement of this new discipline are attracting keen and capable recruits, particularly from physician training programmes. This experience strongly suggests that the (sub)specialty of intensive care is here to stay and it is conceivable that within a short time it will be as removed from anaesthesia as neonatology is, now, from paediatric anaesthesia. If anaesthetists and their institutions fail to grasp this neophyte and become involved in its evolution, there is little doubt that they will soon be regretting the loss of the vantage point they now hold.

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References