LETTERS TO THE EDITOR

EPIDURAL MORPHINE

SIR,

We would like to comment on a letter from Dr. J.M. Wishart, regarding epidural morphine at home.¹

Dr. Wishart's letter leaves the impression that epidural morphine has been accepted as one of the routine methods of pain management amongst anaesthetists. We disagree with him. We feel that since the mechanism of pain relief by epidural morphine has not been clearly elucidated and because of the associated complications, epidural morphine should remain as a special technique for pain management in a closely supervised environment and should be administered by the nursing and medical staff rather than by the patient or his relatives at home, as suggested by Dr. Wishart.

We are certain that Dr. Wishart is fully aware of the complications of epidural morphine and that informed consent for such treatment has been obtained from his patients. We would like to reiterate that, aside from pruritis² and urinary retention,³ the most dreaded complication is respiratory depression. Prolonged apnoea has occurred many hours after epidural narcotic injection.^{4,5} One explanation for this delayed respiratory depression is that once the epidurally injected morphine, which is poorly lipid-soluble, reaches the C.S.F., it will linger in the C.S.F. to be carried wherever the C.S.F. may flow. Eventually a significant proportion of the original dose may be carried rostrally. Once within the fourth ventricle the narcotic is close to the respiratory and cardiovascular nuclei, which are rich in opiate receptors.⁶ A lipid-insoluble drug such as morphine penetrates these vital centres slowly and so respiratory and cardiovascular depression may not occur until many hours after the drug has been administered.

Therefore, epidural morphine for pain relief is not as innocuous as Dr. Wishart suggests and we certainly would not use this modality of pain management without close supervision of the patient.

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FAILURE OF 4-AMINOPYRIDINE POSITIVE INOTROPIC EFFECT

DEAR SIR,

We have recently published the results of our study of 4-aminopyridine (4-AP) on the cardiovascular functions of the dog, in which we found that it has a positive inotropic effect.¹ Stimulated by these findings we have employed this drug in several patients with failed end of extracorporeal circulation pump run (unpublished observations), and in only one out of five cases was the patients' own circulation restored and, at that, for only 45 minutes. The dose of 4-AP varied in these cases from 0.3 to 1.0 mg·kg⁻¹ intravenously.

These therapeutic failures have led us to believe that even though 4-AP has a positive inotropic effect on viable myocardium, the conditions of extreme tissue hypoxia in these cardiac surgery cases can surely induce major disturbances in the calcium regulatory mechanisms, such as raised cytosolic calcium, high calcium mitochondrial overload, and impaired mitochondrial function that lead to failure of ATP production. The scavenging of high amounts of calcium by the mitochondria results in damaged energy generation leading to failure of the calcium sequestration mechanisms, induction of contracture activation of degradative proteinase(s) and phospholipases ultimately leading to cell death, as has been proposed by Nayler.²

Reperfusion of the coronary arteries after myocardial ischaemia, during cardiac surgery