and the laity alike, whatever the subtleties of electroencephalographic and haemodynamic changes.

Secondly, performing the brain stem tests is not sufficient to make the diagnosis of brain stem death. As laid down in the guidelines of the royal colleges,¹ the cause of the condition must be known with certainty and the results of the tests interpreted in the context of the natural course. In most patients with trauma or cerebral haemorrhage this is relatively straightforward²; in infants and in patients with hypoxic brain injury and those who have taken an overdosage of drugs it can be more difficult, and several days may be needed to establish the irreversibility of the condition.

Finally, the diagnosis of brain stem death is made by clinicians who are responsible to the patient and to the relatives of that patient. To call the criteria into question implies that life support should not be withdrawn in this situation but maintained in the hope of recovery. The generally accepted view, which has stood the test of time, is that this action only prolongs the suffering of relatives and needlessly consumes resources in intensive treatment units. This is quite irrespective of any considerations regarding transplantation.

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- 1 Statement issued by the honorary secretary of the Conference of Medical Royal Colleges and their Faculties in the United Kingdom. *Diagnosis of brain death. Br Med J* 1976;iii:1187-8.
- 2 Jennet B, Gleave J, Wilson P. Brain death in three neurosurgical units. *Br Med J* 1981;282:533.

SIR,—We congratulate Mr Nicholas J Odom on his review of the management of the multiorgan donor¹ but think that some specific points need emphasising in relation to heart and lung donation.

In view of the imbalance between demand and supply of donor organs² all patients should be considered to be potential organ donors, provided that the criteria for brain death have been completely fulfilled and the relatives' and coroner's permission has been obtained. It should be emphasised that this includes patients who have committed suicide. Full guidelines for the assessment of potential organ donors have been provided by a working party set up by the United Kingdom health departments.³

Improved care of potential donors will increase the number and quality of donor organs. Careful blood and fluid balance is critical in potential heart and lung donors. In addition, judicious ventilation with positive end expiratory pressure reduces the incidence of neurogenic pulmonary oedema.⁴

At the harvesting operation the organs are at risk from acute blood loss. It is helpful to have at least four units of whole blood crossmatched for the operation to prevent this.

We agree that the management of potential heart and lung donors is a challenge. The limitations imposed by a critical shortage of all donor organs, however, require that every care should be taken to identify potential donors and optimise the condition of donor organs. Expert advice is always available at a designated United Kingdom Transplant Service transplant centre.

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- 1 Odom NJ. Organ donation. 1. Management of the multiorgan donor. *Br Med J* 1990;300:1571-3. (16 June.)
- 2 Wallwork J. Organs for transplantation. *Br Med J* 1989;299:1291-2.
- 3 Working Party on behalf of the Health Departments of Great

Britain and Northern Ireland. *Cadaveric organs for transplantation. A code of practice including the diagnosis of brain death.* London: HMSO, 1983.

- 4 Hutter JA, Cavarrocchi N, Wallwork J. Donor selection and preservation of donor lungs. In: Wallwork J, ed. *Heart and heart-lung transplantation.* Philadelphia: W B Saunders, 1989:463-80.

SIR,—The article by Mr Nicholas J Odom on the management of organ donation was timely in many respects,¹ particularly in recognising the conflict between the demand for surgical facilities in busy units, such as my own, when organ donation has been agreed and is being instituted.

The chronic underfinancing of acute surgical facilities while the surgical demands of the population increase and throughput speeds up throws a critical onus on surgical facilities. In our own case, and I am aware of other neurosurgical units being in the same position, we are now unable to put through the numbers of patients requiring surgical time and staff attention. We are convinced encouragers of donation and, by virtue of our specialty, considerable suppliers. A conflict now exists between our own surgical needs and our cooperation with organ transplantation.

With marketplace criteria soon to determine whether we will be in a position to increase our facility and staffing it will be necessary to solve this problem along market lines. Our initial thoughts are that the most acceptable management would be for the transplant team to provide complete facilities other than space and that this would have to include anaesthetic staff, nursing staff, and all surgical equipment.

It will be important to anticipate these problems and thereby avoid the potentially harmful consequences arising from conflicts of interest within the health service.

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- 1 Odom NJ. Organ donation. *Br Med J* 1990;300:1571-5. (16 June.)

Management of hypovolaemic shock

SIR,—Advanced life support training (ATLS), developed by the American College of Surgeons and accepted by the Royal College of Surgeons of England in November 1988, must be applied to the ordinary practice of all accident and emergency departments—both in large teaching hospitals and in small district general hospitals. This is because not only is it necessary to standardise management so that each member of the medical and nursing team knows what should be done but also in the hurly burly of the "shop floor" in the accident department it is, firstly, all too easy not to recognise the symptoms and signs of impending shock, especially hypovolaemic shock, and, secondly, all too easy not to respond sufficiently quickly.

It is regrettable that Mr Peter J F Baskett in his article on management of hypovolaemic shock states: "Venous cut down techniques are time consuming, rarely necessary, and usually less effective than direct cannulation of a central vein."¹ Advanced life support training states: "Access to the vascular system must be obtained promptly. This is best done by establishing 2 large bore catheters before any consideration is given to a central line. The most desirable sites for peripheral venous lines (in order of priority) are: (1) percutaneous peripheral access via forearm or antecubital veins, and (2) cutdown on the saphenous arm veins. If circumstances prevent the use of peripheral veins, central venous access is indicated, using a Seldinger technique."²

Initial central venous cannulation is perhaps ideal, provided that the cannula is large—for example, the Vygon Seldinger catheter of French gauge 10. But it must be remembered that the flow of a fluid through the tube is proportional to the internal diameter of the tube and inversely proportional to the length of that tube. Long, thin central venous lines are of use only to measure central venous pressure. Furthermore, central venous cannulation is not without risk, and, above all else, it often takes time.

All too often relatively inexperienced doctors will attempt central venous cannulation only to delay the immediate resuscitation of the patient. If, however, the expertise is available then while peripheral venous cannulation is being undertaken central venous cannulation—with an appropriate wide bore tube—can, in addition, be carried out, remembering that the cervical spine often needs to be immobilised with a hard cervical collar or by manual in line immobilisation.

What may be right in the hands of a consultant anaesthetist who has a special interest in resuscitation and who spends time in his or her accident and emergency department is not right for most doctors, who do not have Mr Baskett's experience, commitment, or ability. We, as instructors of advanced life support training, need to teach that which is reproducible.

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- 1 Baskett PJF. Management of hypovolaemic shock. *Br Med J* 1990;300:1453-9. (2 June.)
- 2 Royal College of Surgeons of England. *Advanced trauma life support course.* London: RCS, 1989:65.

AUTHOR'S REPLY,—I entirely agree with Mr R Touquet's support and enthusiasm for the advanced trauma life support (ATLS) courses run under the auspices of the Royal College of Surgeons of England. I also agree with his recommendation of the use of two percutaneous large bore peripheral intravenous cannulas as the first step in volume replacement. In cases in which blood loss cannot be adequately managed by transfusion by this route, however, I would stick to my opinion that a short wide bore cannula placed in a central vein offers a more rapid and effective solution than a peripheral venous cut down. The Seldinger technique can be used, but a simple cannula over needle system is often quicker and cheaper. Very high flow rates can be achieved with a 10 or 12 gauge cannula. Only if this technique fails or if the practitioner is unfamiliar with the method should the third option of direct venous cut down be used.

Mr Touquet is absolutely correct to point out that the technique of central venous cannulation requires training and practice, but so does venous cut down. Expertise in central venous cannulation can be acquired in intensive care units or in anaesthetic rooms, where your friendly anaesthetist should be happy to help, before the technique is used during major surgery.

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Monoamine oxidase inhibitors and low alcohol or alcohol free drinks

SIR,—We wish to add to the recent comments made by Drs P Tyrer^{1,2} and M Sandler² on the potential for an adverse interaction between tyramine in low alcohol or alcohol free beverages and monoamine oxidase inhibitors.

Hannah *et al* investigated a range of alcoholic