Managing patients who refuse blood transfusions

Cell savers may be unacceptable

EDITOR,—I note that the first of two patients reported on who initially refused a blood transfusion underwent surgery two weeks later with the aid of a cell saver.¹ The belief of Jehovah's Witnesses that they must "abstain from blood" is widely known to preclude the administration of homologous transfusion with blood products. Many Jehovah's Witnesses also believe, however, that the reinfusion of their own blood lost from their body is also against their teachings. This means that they may also refuse the use of such techniques as intraoperative cell savers, reinfusion drainage systems, extracorporeal circulation, and predonation of blood for autologous transfusion. If the use of such a technique is considered and the patient is a Jehovah's Witness the technique must be fully discussed with the patient preoperatively so that his or her beliefs are not contravened; this is in line with the principles of informed consent.

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1 Finfer S, Howell S, Miller J, Willett K, Wilson-MacDonald J, Wilson DH, *et al.* Managing patients who refuse blood transfusions: an ethical dilemma. *BMJ* 1994;308:1423-6. (28 May.)

100% Oxygen at normal pressure is an alternative

EDITOR,—Two aspects of the management of patients who refuse blood transfusion deserve emphasis.¹ The first point concerns the administration of 100% oxygen at normal pressure. When a patient is breathing air the concentration of oxygen in solution in arterial blood is only about 3 ml/l. This compares with a concentration of 25 ml/l for oxygen in combination with haemoglobin at a critical haemoglobin concentration of 20 g/l. If the patient breathes 100% oxygen the amount in solution should increase to about 20 ml/l, which is the equivalent of increasing the haemoglobin concentration (while the patient is breathing air) from 20 to 34 g/l, a concentration usually compatible with survival. Hyperbaric oxygen is even more effective, as James Watt notes,¹ but is available in only few centres. Orthobaric oxygen is available in all hospitals, although its effective administration at 100% concentration requires attention to detail. Fluorocarbons may

have a role in enhancing the amount of oxygen in solution.

The second point is the crucial role of tissue perfusion. Oxygen delivery is the product of perfusion and arterial oxygen concentration.² Organ perfusion is often decisive, but the normal value for whole body oxygen delivery is of the order of 1000 ml/min; the minimum level compatible with survival is unknown, but indirect evidence suggests that it is rather less than 400 ml/min. Survival at critical haemoglobin concentrations of the order of 20 g/l thus depends on cardiac output increasing to about 14 l/min. Arterial pressure is important, but the critical variable is flow and not pressure.

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Proposed alternatives are incorrect

EDITOR,—James Watt's suggestion that hyperbaric oxygen would have been at least as efficacious as, and less dangerous than, blood transfusion in the management of a man who refused blood products after suffering extensive orthopaedic trauma¹ is erroneous. Hyperbaric oxygen cannot be regarded as a practical alternative to blood transfusion to ensure adequate oxygen delivery for any length of time in such patients.

Oxygen must be given at 3.04×10^5 kPa to supply the body's total demand in the form of dissolved oxygen (60 ml/l).² This can be achieved only intermittently for short periods, since continuous administration produces oxygen toxicity within hours, manifest by convulsions and serious pulmonary complications (atelectasis, oedema, and fibrosis), and would ultimately be fatal.³ In addition, there are practical problems in caring for critically ill patients being given hyperbaric oxygen: the safety of the attenders, who require safe decompression; the increased fire hazard; and the care of equipment, including ampoules, which may implode, and endotracheal cuffs, which will deflate at the high pressures. Providing hyperbaric chambers to many hospitals to treat such a minority of patients if they should need it would not be cost effective, especially when the dubious indications and problems are considered.

Watt also wrongly implies that regional anaesthesia would have been a safer alternative to general anaesthesia in such a patient. An epidural or subarachnoid block would produce profound hypotension in a bleeding patient and is absolutely contraindicated.⁴ Peripheral nerve blockade to effect adequate anaesthesia for above knee amputation requires multiple injections (to block the sciatic, femoral, obturator, and posterior cutaneous nerves of the thigh).⁵ The possibility of even an experienced anaesthetist missing one of these nerves precludes the use of peripheral nerve blockade as the sole technique. General anaesthesia would be preferred by most anaesthetists in such a case.

The role of erythropoietin is limited to the prolonged postoperative phase in accelerating the rise in haemoglobin concentration and thus would

have been of no benefit to the patient who died. No mention is made of the synthetic oxygen carriers, which, although not yet fully developed, will potentially be useful in such situations.

We uphold the wishes of all our patients, but the alternative treatments proposed by Watt seem questionable, especially in the acute phase; in particular, hyperbaric oxygen treatment at the levels quoted would prove lethal.

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1 Finfer S, Howell S, Miller J, Willett K, Wilson-MacDonald J, Wilson DH, *et al.* Managing patients who refuse blood transfusions: an ethical dilemma. *BMJ* 1994;308:1423-6. (28 May.)

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Puts additional burdens on the rest of society

EDITOR,—The cases of Finfer *et al.*¹ illustrate a well known difficulty in the treatment of Jehovah's Witnesses, who do not wish to act counter to an unusual interpretation of an ancient scripture. These cases were managed without the transfusion of blood products; one patient died, and the other, surprisingly, survived.

Jehovah's Witnesses believe that, even when they have been seriously injured, avoidance of blood products is their highest responsibility. This is their privilege in a free society, but it is not the Jehovah's Witness's only responsibility. Like everyone else, they are responsible for the care of their families and the development of their church. In my opinion, they also have a responsibility not to put additional burdens on the rest of society in the pursuit of this privilege for themselves.

Alternative treatments are imperfect by all orthodox measures. General hospitals will never maintain hyperbaric chambers to provide alternative treatment for the occasional Jehovah's Witness, as one of the commentators on the cases reported by Simon Finfer and colleagues suggest. A cell saver was used in one of the cases, presumably because this does not contravene the interpretation of the scripture. Could Jehovah's Witnesses fulfil all their responsibilities by establishing a blood bank for autotransfusion? Procuring and thawing blood in an emergency would be slower than usual, but it could improve care compared with the current alternatives.

Lastly, all the commentaries on the paper support managing these cases without transfusion. The commentators are a former medical missionary, a Jehovah's Witness, a lawyer, and one of the clinicians reporting the cases. Excellence in editorial practice requires that all material aspects (especially for a non-scientific issue) should be available to readers unless the position of the editor has been clearly stated. Was it impossible to find a physician, surgeon, or anaesthetist who would write in support of giving transfusions to these

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patients? Would another church support a member who withheld lifesaving treatment from a Jehovah's Witness? This was not a balanced treatment of an issue clearly introduced in the journal as an ethical dilemma.

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****When we ask people to comment on a case we try to select a range of relevant people—in this case an ethical expert, a lawyer, and a Jehovah's Witness—but we do not seek to know in advance what line they will take. We think that it is right to try to seek opinions from a range of disciplines and specialties but wrong to expect people to follow a particular line. The letters columns are open to those who want to take a different view.—ED, *BMJ***

Use of resources needs to be addressed

EDITOR,—Simon Finfer and colleagues' article and the accompanying responses seem to raise two distinct issues, which in my view should be kept separate: the wishes of the patient (and issues concerning consent) and the "moral" issue of use of resources. The only respondent who seems to have tackled the issue of use of resources is Michael A Jones; doctors need to consider this increasingly relevant question in the world of the internal market.

Had Finfer and colleagues' other patients been denied the use of resources required by the authors' first (surviving) patient, and had one of those patients or his or her representative chosen to sue for lack of adequate care, it would, presumably, in the first instance, be the health authority or trust, not Finfer and colleagues. It is interesting to conjecture how a trust might have chosen to respond. It could have argued that it was up to the medical staff to dispose of clinical resources more efficiently and thereby have implied that responsibility rested with its employees (as Jones, in his final paragraph, also seems to suggest the courts may imply). It could have accepted full responsibility for the lack of resources. Or it could have argued that the contract it held with its local purchaser was cash limited and that some responsibility lay with the purchaser or its contracts managers for not having built in sufficient flexibility to allow for this kind of situation. The purchaser could, of course, in turn argue that responsibility lay with central government for having cash limited its budget.

There are doubtless many other alternatives, but I am left wondering who does bear the moral responsibility so readily and bravely shouldered by Finfer and colleagues.

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Chemotherapy for haematological malignancies can be fatal

EDITOR,—Those of us who treat haematological malignancies are sometimes faced with equivalent dilemmas to that discussed by Simon Finfer and colleagues, although the time scale is different from that in acute trauma.¹ A few years ago I

attempted chemotherapy in a 19 year old woman who was a practising Jehovah's Witness. The implications of chemotherapy without the support of blood and blood products were fully discussed with her and her family. All remained steadfast in their refusal to accept any form of red cell transfusion. The patient received chemotherapy but, almost inevitably, died.

Managing such a patient proved difficult for all the staff concerned with the case. Nevertheless, the beliefs of the patient and her family were respected. It was therefore some comfort to the staff that the family wrote to the unit specifically to thank the staff for the way in which they had handled the difficult situation. The letter clearly gave the impression that the family had come to terms with the death in their own way, doubtless sustained by their faith.

Experience of this case leads me to agree strongly with the view expressed by David H Wilson²: that we must continue to inform such patients adequately about the consequences of their refusal to accept blood transfusion, but, equally, that we must respect their right to refuse this supportive treatment even if the consequence is likely to mean their death. In certain respects the death of this young Jehovah's Witness with malignant disease ultimately proved easier for staff to cope with than the deaths of other young patients with leukaemia in families with no particular religious or other faith enabling them to prepare for or accept death.

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Register of willing consultants is needed

EDITOR,—We agree with Simon Finfer that every hospital should maintain a list of consultants who are prepared to treat Jehovah's Witnesses.¹ These data could easily be collated with regional and national registers. The royal colleges might wish to have a role. Our recent experience of managing a Jehovah's Witness who required elective radical surgery is relevant.

In September 1993 a 45 year old Jehovah's Witness was diagnosed as having invasive vulval carcinoma. The gynaecologist under whose care the vulval biopsy was carried out declined to carry out radical vulvectomy (the preferred mode of management) because the patient refused blood transfusion. Instead he offered alternative management of radiotherapy and chemotherapy followed by simple vulvectomy. The patient received two pulses of chemotherapy but declined to continue with the rest of the chemotherapy and radiotherapy. At this stage, three months after diagnosis, her general practitioner referred her to our hospital for consideration for surgery.

Precautions were taken to minimise the perioperative blood loss. Radical vulvectomy with bilateral inguinofemoral lymphadenectomy was carried out by a team consisting of two consultant gynaecologists and two assistants. A cell saver autologous blood recovery system (Haemonetics Leeds) which is an acceptable method of conserving the blood lost, was used.² With this system blood lost was suctioned from the surgical field, anticoagulant was added, and tissue, clots, and debris were filtered out. The washed packed red cells were finally suspended in saline ready for reinfusion. As her preoperative haemoglobin concentration was 136 g/l and the estimated blood loss at surgery was only 500 ml, replacement was not required. Her postoperative period was uneventful except for minor wound infection.

The above case highlights the need for such regional or national registers so that referral and appropriate management can be undertaken. Two preconditions need to be met before the advantages of such a register can be fully exploited. Firstly, every health care provider should be willing to take cognisance of the religious beliefs of Jehovah's Witnesses; and, secondly, if surgeons are unwilling to operate on Jehovah's Witnesses themselves they should facilitate their referral to a surgeon who has the appropriate facilities and is willing to do so.

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Treatment of oesophageal cancer

Prognosis is not uniformly bad

EDITOR,—We agree with Seamus O'Reilly and Arlene Forastiere that surgery remains the standard treatment for resectable oesophageal cancer, but we do not agree that the outlook in such cases is almost hopeless.¹ The review of Earlam and Cunha-Melo spanned two decades of all types of practice, and the latest paper in that review was published 16 years ago. This review is now of only historic interest and should not be quoted as a reflection of modern practice. Nor do we agree that most patients have metastases by the time they present. The paper quoted in support of this statement was a necropsy study, which would have been biased in that direction.

Last year we saw 102 new patients with oesophageal cancer in our unit. Sixty two were secondary referrals from consultants and 40 were primary referrals from family doctors. Eighty eight patients were explored with a view to potentially curative resection, of whom 65 underwent successful resection (74% of those explored and 64% of the total). Twelve patients were considered to be unsuitable for surgery and had intubation as a primary procedure. Mortality at 30 days was 5% (three patients). Of the 40 patients referred by family doctors, 31 were explored and 27 underwent resection (87% of those explored and 68% of the total); nine patients (23%) were unsuitable for surgery and underwent primary intubation (as opposed to three patients (5%) in the group referred by consultants). Overall five year survival after surgery alone carried out in specialised units averages from 36%² to 58%,³ with higher rates for stage I disease.

Chemotherapy in various combinations with radiotherapy and surgery has been used over the past 20-30 years. The results are conflicting and the benefits unproved, as O'Reilly and Forastiere indicate. We agree that properly set up randomised trials are important to provide answers over the next decade. Because of the high toxicity of the available drugs, however, one should not be too optimistic about the outcome of such trials.

The treatment of cancer generally is patchy in Britain. It is encouraging that the government has recognised this and is trying to do something about it. Cancer of the oesophagus, like any other cancer, should be treated in specialised centres, where the patient stands the best chance of a cure. The future must lie in the development of agents that kill the tumours but spare the rest of the patient. Until