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CONSENSUS CONFERENCE ON AUTOLOGOUS TRANSFUSION*

FINAL CONSENSUS STATEMENT

People of the UK have been and continue to be well served by their National Blood Transfusion Services. The panel emphasises the need to utilise good surgical techniques which minimise blood loss and recognises the importance of efforts to limit the use of blood to clinical necessity.

Notwithstanding the safety of allogeneic blood transfusion, a number of questions have been raised internationally, particularly in North America and the European Union, suggesting that the supply of blood can be supplemented by autologous transfusion techniques.

It is recognised that all blood transfusions carry risks. Screening of donated blood, however, has greatly reduced the potential risks of transfusion-transmitted diseases. There remains a degree of uncertainty on the immunological effects of allogeneic transfusion.

When used as the sole source of transfused blood, the principal advantage of autologous blood transfusion is the avoidance of the risks of transmitting infectious agents and potential immunological side effects of allogeneic transfused blood.

The panel notes the paucity of controlled randomised trials in the evaluation of these procedures and recognises the need to develop appropriate methodology and outcome measures to determine risk benefit and cost effectiveness.

Provision of services, present and future, should take account of the rights, interests and requirements of patients. Good medical practice requires the disclosure of alternatives as well as risks and benefits.

Preoperative Autologous Donation (PAD)

At the present time, in the UK there is a low degree of public interest, although the facility of PAD is potentially widely available. In Centres which offer this facility, the present take-up is low compared to take-up rate in America of up to 10 per cent accounting for 5 per cent of the total blood usage.

Not all patients are suitable and patients must be carefully selected on medical grounds. Eligible patients who undergo elective orthopaedic surgery are the primary target of PAD and it is possible to achieve exclusive use of autologous blood in at least 75 per cent of cases.

A current disadvantage is the difficulty of guaranteeing non-cancellation of routine surgery within the NHS. Other disadvantages include the possibility of cardiovascular accidents following donation. A further concern is that the operation has to be scheduled to allow usually for 1–4 donations at approximately weekly intervals. In some patients this could be a disadvantage. Although there are practical difficulties associated with the general introduction of PAD in the UK, we foresee that this practice may become more widespread provided that appropriate resources are made available.

*Held in the College on 4–5 October 1995.

Acute Normovolaemic Haemodilution (ANH)
The evidence presented suggests that when used alone, ANH has a limited capability for preventing the need for allogeneic blood. We acknowledge that there are potential benefits as well as hazards and that careful evaluation of this technique is essential before it can be recommended for widespread use.

Intraoperative Salvage (IS)
The clinical benefits of IS become more apparent in surgical procedures with acute blood loss of more than 1,000 mls. Blood loss levels below this volume would not support the use of IS particularly with respect to cost benefit. Provided that a rigid Standard Operating Procedure is in place and the equipment is easily available with appropriate staff training, the side-effects of IS are fewer than those associated with allogeneic transfusion. An increasing body of evidence indicates that this procedure can substantially reduce the need for allogeneic blood.

Future directions
Further work in the development of appropriate blood substitutes and agents to enhance haemostasis will help to reduce the need for allogeneic transfusion. We would also favour the establishment of a national register of adverse events relating to all autologous transfusion procedures.

MEMBERS OF THE PANEL

Sir Christopher Booth (Chairman)
Professor R. L. Akehurst
Professor J.-P. Allain
Mr B. Christie
Professor P. Foëx
Professor S. T. Holgate
Mr J. Kyle
Professor S. J. Machin
Professor Averil O. Mansfield
Professor Sheila A. M. McLean

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MONRO *SECUNDUS* AND 18TH CENTURY LYMPHANGIOGRAPHY

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The first clinical trial of lymphangiography was carried out over 40 years ago by Kinmonth[1] who injected vital dyes into the tissues of the foot in patients suffering from the late effects of deep venous thrombosis of the legs. The dye was injected into the sole of the foot subcutaneously, intramuscularly, or both together, and the lymphatic channels in 8 out of 10 of the cases were successfully outlined. The methodology was based on earlier preliminary animal[2,3] and clinical[4] studies. Kinmonth, however, stressed that difficulties were frequently encountered in finding lymph trunks in the living subject.

Several years later, the first method of delineation of lymph vessels using a radiological approach was described by Kinmonth.[5] Patent Blue was first injected subcutaneously into the interdigital webs of the toes to delineate the lymphatic channels. Once the latter were clearly seen, the lymph trunks were then cannulated and injected with a 70 per cent solution of Diodone. He recommended that radiographs should be taken with as little delay as possible after the injection of contrast medium, because the shadow of the lymph trunks remained at its clearest for only about five minutes.

EIGHTEENTH CENTURY CADAVER INJECTED WITH MERCURY TO DISPLAY THE LYMPHATIG VESSELS

The relatively recent date of the first lymphangiograms on living patients is of interest to us, because we have been able to study an 18th century cadaver of an adult male in which the majority of the lymphatic vessels of the limbs and trunk, excluding those of the gut, have been cannulated and injected with mercury (Figs 1 and 2). This feat had been performed in Edinburgh almost two hundred years earlier. While we are unable to state the exact year in which this extensive demonstration of the lymphatic (or absorbent) system was carried out, indirect evidence suggests that it was probably at some time between about 1780–1790. It is clear that this cadaver had been considered of great importance at the time, and for the subsequent one hundred years before it disappeared into obscurity in the cellars under the Department of Anatomy over 70 years ago, only to be rediscovered in the mid-1990s, when its significance in relation to the history of lymphangiography was appreciated.

According to the 1831 Descriptive Catalogue of the Anatomical Museum of the University of Edinburgh, the cadaver (catalogue page 97, specimen reference number M40) represents a 'Male subject; the vessels of the absorbent system are injected with quicksilver, and dissected'. Unfortunately, this catalogue gives no information as to the year when, or under whose direction, this specimen was prepared. It lists the collection of anatomical preparations of Monro *primus* and Monro *secundus* bequeathed to the University in 1800, to be used by Monro

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