British paediatrics

Liver transplantation

A joint working party between the British Paediatric Association and the British Association of Paediatric Surgeons has recently reported its findings. The report reviews the history and present state of liver transplantation, comments on the related problems in children, and discusses the resource implications.

The first human liver transplantation was performed in 1963 and during the next 10 years over 600 transplants were carried out in 15 centres in Europe and North America. By 1983 it had been clearly shown that liver transplantation could prolong life in patients with severe liver disease for which there was no effective alternative treatment.

Professor Stazl's unit in North America has recorded a 70% one year survival in children, although 30% require a second transplant within that period. Surviving children have normal liver function and most of them show good catch up growth. The quality of life in survivors is good and most can resume their former activities. There are many fatal complications and current data are insufficient to allow full evaluation of survival beyond one year. The disorders for which liver transplantation has been performed in children include extrahepatic biliary atresia when standard surgery has failed, progressive cirrhosis due to α1 antitrypsin deficiency, Wilson's disease that has failed to respond to chelation therapy, and certain types of glycogen storage disease.

The postoperative period of intensive care is about 14 days, during which there is a high risk of complications, particularly bleeding and problems in the biliary, pulmonary, renal, and cardiovascular systems. Early regrafting may be necessary because of thrombosis or rejection. Immunosuppression is still not satisfactory and increased susceptibility to infection is a major problem in children. The risk of long term malignancy has not yet been assessed.

The working party report quotes the recommendations of a National Institutes of Health consensus conference regarding the stages of liver disease in which transplantation should be considered. These are:

- When death is imminent;
- When irreversible damage to the central nervous system is likely to develop;
- When the quality of life has deteriorated to an unacceptable level.

The resources needed for liver transplantation are considerable. The procedure can only be undertaken in tertiary care centres with an active transplantation programme. In addition to expert surgical personnel the transplant team must include paediatricians, hepatologists, psychiatrists, social workers, and a transplantation coordinator. Services such as tissue typing, immunology, pathology, radiology, and renal dialysis should be available.

The number of potential candidates for transplantation in children is not known. The working party estimates that at least 70 children die each year in the United Kingdom from disorders for which liver grafting has been effective, but it is not known how many of these might have major contraindications to the operation.

There are currently three centres in the UK providing an active liver transplantation service. The Cambridge/King's collaborative service has carried out 230 transplants (up to July 1985), of which 26 were in children. The Birmingham service has transplanted 30 patients, including two children. The Royal Free Hospital started its service in 1981 and has so far undertaken only eight transplants, none in children. The Secretary of State has agreed that the Cambridge/King's and Birmingham services should receive central funding for 1986–87.

The main conclusions of the working party are that:

- Liver transplantation is now a realistic form of treatment for which there is a demonstrated need in the UK.
- Paediatric services should be developed in conjunction with transplantation services for adults.
- The children should be cared for in children's units by children's trained staff.
- At this stage paediatric services should be developed only in two centres, Cambridge/King's and Birmingham.

A register of children with chronic liver disease and metabolic disorders that may require liver transplantation should be set up at the department of child health at King's College Hospital.