LETTER TO THE EDITOR

ABO incompatible liver transplantation: a case of immediate need

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We report a case of ABO incompatible liver transplantation (ABOi-LT) for fulminant hepatic failure (FHF). We report the immune management protocol used and the ethical issues involved.

A 42-year-old, blood group O female was admitted with sub-acute hepatitis of unknown etiology. Three days after admission, she developed encephalopathy and was listed for super-urgent liver transplant (UK Super Urgent Liver Scheme [1]). In the next 8 days, the patient deteriorated needing multi-organ support.

On the 9th day postlisting, an A1 blood group donor organ became available locally. After discussion between the transplant surgeon, intensivist and hepatologist, it was felt that her chance of survival without immediate transplantation was bleak to consider the risks of an ABOi-LT. Each of UK liver transplant centers was approached to confirm that no A or AB group patient on their waiting lists was in urgent need of transplant. After discussion with the patient's family, the decision was made to proceed.

Two pre-operative plasmapheresis (PX) treatments were performed to lower the recipient's anti-A IgG antibody titre from an initial level of 1:512 to 1:4 (Fig. 1). Each PX was followed by infusion of 100 mg/kg i.v. immunoglobulin (IVIG, Flebogamma). Induction immunosuppression was anti-CD20 antibody (Rituximab at 375 mg/m^2: MabThera®, Roche, Auckland, New Zealand) and anti-interleukin 2-receptor antibody (Basiliximab 20 mg: Simulect®, Novartis Pharm, East Hanover, NJ, US). Operation followed standard surgical technique with the addition of splenectomy. Further doses of IVIG and methyl prednisolone were administered at arterial reperfusion. Tacrolimus, mycophenolate mofetil and prednisolone were started post-transplant. She underwent daily PX/IVIG treatment for the first four postoperative days. After day 4, PX was only performed when anti-A titres rose above 1:16 (one instance, day 9). A second dose of basiliximab was given on day-4. Further progress was satisfactory. She was discharged on the 20th postoperative day. She is well 10 months after the transplantation.

ABO incompatible liver transplantation is associated with an increased risk of vascular[2] and biliary complications[3]. Early series reported high graft loss rates, but recent studies have shown considerable improvements in graft and patient survival [4,5]. However, published data of its use in the UK has been very limited to date [6]. The current median waiting time on the UK Super Urgent Liver Scheme is 2 days compared with 1 day in 1996 (pers. comm., UK transplant). While the circumstances of our patient were extraordinary, these will become more frequent as the demand for cadaveric liver grafts continues to expand.

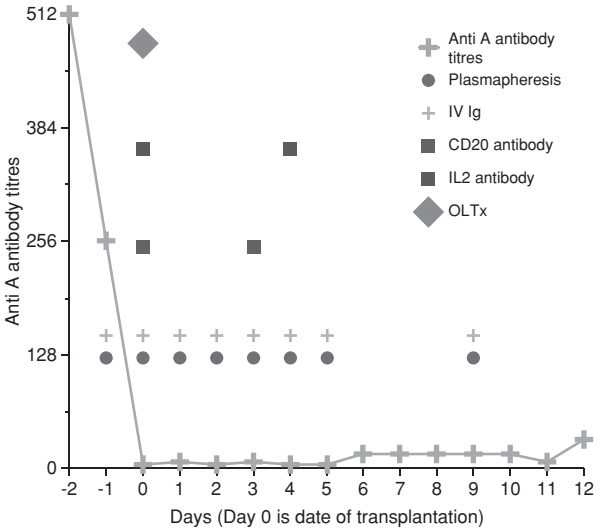

Figure 1 Serial anti-A antibody titres and time points of various therapeutic interventions.

Utilitarians will claim that cadaveric ABOi-LT is an unsatisfactory use of a scarce resource and that it directly jeopardizes the lives of other patients on the waiting list. However, this should be accepted as a valid option for patients with FHF similar to the acceptance of the need to transplant other high-risk groups (hepatitis C, accelerated chronic rejection). We believe that this option should be considered for inclusion in the UK current liver allocation system with adequate safeguards. For clinicians faced with such a stark choice between the competing considerations of utilitarianism and 'making the care of

your patient your first concern' [7], no decision may be ultimately ethical in the context of societal healthcare.

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References

1. UK Transplant (http://www.uktransplant.org) (last updated Aug. 2005; cited 2006 Aug. 8). Liver Organ Sharing Principles. Bristol: NHS Blood and Transplant, c1999–2006. Available at: http://www.uktransplant.org.uk/ukt/about_transplants/organ allocation/liver/liver_organ_sharing_principles/liver_organ_sharing_principles.jsp.
2. Gugenheim J, Samuel D, Reynes M, Bismuth H. Liver transplantation across ABO blood group barriers. *Lancet* 1990; **336**: 519.
3. Sanchez-Urdazpal L, Batts KP, Gores GJ, *et al*. Increased bile duct complications in liver transplantation across the ABO barrier. *Ann Surg* 1993; **218**: 152.
4. Hanto DW, Fecteau AH, Alonso MH, Valente JF, Whiting JF. ABO-incompatible liver transplantation with no immunological graft losses using total plasma exchange, splenectomy, and quadruple immunosuppression: evidence for accommodation. *Liver Transpl* 2003; **9**: 22.
5. Toso C, Al-Qahtani M, Alsaif FA, *et al*. ABO-incompatible liver transplantation for critically ill adult patients. *Transpl Int* 2007 (doi:10.1111/j.1432-2277.2007.00492.x).
6. Koukoutsis I, Bellagamba R, Tamijmarane A, *et al*. Outcomes after identical and compatible orthotopic liver transplantation for fulminant hepatic failure: a single center experience in UK. *Transpl Int* 2007; **20**: 659.
7. General Medical Council (http://www.gmc-uk.org) (cited 2006 Aug. 8) London: Good Medical Practice c2001–2006. Available at: http://www.gmc-k.org/guidance/good_medical_practice/index.asp.

