CHILDREN AS DONORS: A NATIONAL PEDIATRIC INTENSIVE CARE STUDY TO ASSESS PROCUREMENT OF ORGANS AND TISSUES

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Objectives Shortage of size-matched organs and of tissues is the key factor limiting transplantation in children. Empirical data on the procurement process in children is sparse. This study aimed to gain insight into the recognition of potential pediatric donors in the Netherlands and the procurement process.

Methods A national retrospective cohort study in the Dutch pediatric intensive care units. The records of 683 deceased children were analyzed by two independent donation experts and procurement process data were compared with the national protocol.

Results From 2003 thru 2006, 74 (11%) of the deceased children were found to have been suitable for organ donation and 132 (19%) for tissue donation. Sixty-two (84%) potential organ donors had been correctly identified; parental consent had been obtained and donation effected in 26/62 children (42%). Sixty-three potential tissue donors (53%) had been correctly identified; parental consent had been obtained and donation effected in 17/65 children (27%).

Conclusion Recognition of pediatric organ donors by medical professionals is acceptable; recognition of tissue donors may be improved. Efforts to address the shortage of organs and tissues for transplantation in children should focus on the gap between recognition of donors and parental consent. We suggest such studies should not only assess the process itself, i.e. the competencies of the professional staff (micro-level) but also the influence of legislation, societal views on donation by children, and the potential relevance of children’s views on donation (macro-level).

LIVING DONOR LIVER TRANSPLANTATION FOR ALAGILLE SYNDROME: RECIPIENT CHARACTERISTICS AND OUTCOME IN A SINGLE CENTER

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Background and aims Alagille syndrome (AGS) is rare in Taiwan. The aim of this study was to review our institutional experience with liver transplantation (LT) for AGS.

Methods We performed a retrospective analysis of transplant records of patients diagnosed as AGS and underwent LT between 1997 and 2010. Nine patients underwent living donor LT.

Results Cholestasis and characteristic faces were seen in all patients. Posterior embryotoxon was seen in 4/9 (44.4%), butterfly vertebrae in 3/9 (33.3%), heart defect (pulmonary stenosis in 2) in 3/9 (33.3%), and renal disease in 2/9 (22.2%) patients. Immiodiabetic acid scans showed no excretion of isotope into the bowel after 24 hours in 4/9 (44.4%). A small gallbladder on ultrasonography was noted in 3/9 (33.3%) and suggested a false diagnosis of biliary atresia. All underwent diagnostic laparotomy and liver biopsy. Liver biopsy showed characteristic features of paucity of interlobular bile ducts in all patients. Kasai portoenterostomy was not performed in any patient before being referred for LT. The mean age at time of LT was 4.6 years. The 5-year overall survival rate after living donor LT was 88.9%.

Conclusions Our conclusion is that the clinical features of AGS are informative. Histological confirmation is important in the diagnosis. These findings support the concept that infants with liver diseases warrant early referral to a specialist center.
transplants were from living-related donors. At the time of transplantation the mean height z score was -1.15 +/- 1.7 and BMI z score was 0.44 +/- 1.8. Eighteen months after transplantation, catch-up growth was seen in 40% of children, 30% had normal linear growth without any catch-up and 30% had slow growth rate after transplantation. Children with evidence of catch-up growth (growth velocity z score >0) had more growth retardation at the time of transplantation, and were receiving lower doses of prednisone at 1.5 years after transplantation. Younger infants (below 6 months) were most likely to demonstrate catch-up growth after transplantation. In summary, a large proportion of children have growth retardation at the time of liver transplantation. Serum albumin increased significantly after (59.8 +/- 5.2 g/L) vs before (34 +/- 11g/L) transplantation, and Alanine transaminase (ALT) decreased significantly from (130+/-.260U/L) to (30+/-.15U/L). Poor growth after transplantation occurred more in those receiving higher doses of corticosteroid. This growth retardation is inversely correlated with age. Growth after transplantation is proportional to higher doses of corticosteroid. This growth retardation is inversely correlated to age at transplantation.

**Results**

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**Background**

Hypoxic-ischaemic encephalopathy (HIE) is associated with high mortality and morbidity rates worldwide.

**Aims** To investigate brain haemodynamic, cytochrome-c-oxidase (CCO) and energy-resource changes during transient hypoxia-ischaemia (HI) and recovery using simultaneous broadband near-infrared spectroscopy (NIRS) and phosphorus (31P) magnetic resonance spectroscopy (MRS).

**Methods** Nine healthy piglets (aged <24 hr) were anaesthetised and physiologically monitored. Transient cerebral HI (duration 20 minutes) was induced by reducing the inspired oxygenation and reversibly inflating bilateral carotid artery occluders. Using 31P MRS we measured inorganic phosphate (Pi)/epp, phosphocreatine (PCr)/epp, and nucleotide triphosphate (NTP)/epp where epp=exchangeable phosphate pool=Pi+PCr+3NTP. NIRS measured cerebral concentration changes of oxy-haemoglobin (HbO2) and deoxy-haemoglobin (HHb), and cytochrome-c-oxidase oxidation state changes (Δ[oxCCO]).

**Results** Simultaneous 31P-MRS and NIRS results are shown. HI rapidly reduced brain oxygenation as shown by changes in haemoglobin difference (Δ[HbO2]-Δ[HHb]) closely followed by a fall in Δ[oxCCO]. PCr/epp fell, and Pi/epp rose, quickly while NTP/epp was buffered initially and only declined when Δ[oxCCO] was significantly lowered.

**Discussion** During transient HI, CCO becomes reduced due to oxygen depletion; adenosine triphosphate levels are initially preserved by the creatine kinase reaction leading to PCr decline whereas energy utilisation without oxidative phosphorylation leads to increased Pi. Complementary MRS and NIRS enable better understanding of the cerebral metabolic response to HI and can help evaluate early interventional therapies.