

Implementation of ABO-incompatible heart transplantation in Spain

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INTRODUCTION: Heart transplantation waiting list mortality for children under 1 year old in Spain is high (30%), despite a high national donation rate, due to the lack of donors for this age group. Average waiting time for children under 1y is 70 days and only around 4 heart transplants are performed per year.

GOAL: Implementation of a national ABO-incompatible heart transplantation (ABOi-HT) program may decrease waiting list mortality and contribute to better outcomes.

METHOD: All 6 pediatric heart transplant centres in Spain agreed to start an ABOi-HT program in 2018. Pediatric recipient candidates for ABOi-HT should have isohemagglutinin titers $\leq 1:8$. A policy of isohemagglutinin-free blood products administration for all potential recipients was implemented from listing time. Intraoperative exchange transfusion is performed if titers reach levels above 1:8. Immunosuppression was similar to ABO compatible HT. Allocation policies in the country for children with weight ≤ 15 kg were modified to give priority to highest risk patients without considering blood group compatibility.

RESULTS: 11 patients have been included in the waiting list for ABOi-HT in a 1 y period, with a mean age of 5 months and a mean weight of 5,1 kg. Indications for HT were congenital heart disease (7, mainly LVHS in 6 cases),dilated cardiomyopathy (2) and other (2 RCM). 10 were transplanted, 4 patients underwent ABOi-HT and 6 ABO-compatible. Mean waiting list time was 44,8 days. Only 1 patient died while on the waiting list because of a neurological complication (mortality in the waiting list 9%). Two patients died after transplantation (1 of them ABOi-HT due to an widespread Aspergillus infection). The first three patients who received an ABOi-HT maintain low isohemagglutinins titers and good biventricular function after 11 months of follow-up.

CONCLUSION: ABOi -HT in Spain, with a policy of giving priority to highest urgency code patients regardless of blood group compatibility, resulted in a reduction of waiting list mortality, time on list and an increased probability of transplantation.