

New national program in prenatal aortic valvuloplasty – preliminary experience

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Objectives: Aortic balloon valvuloplasty in fetuses has already been accepted as a method of treatment in fetuses with evolving hypoplastic left heart syndrome (HLHS) or critical aortic stenosis with heart failure. There are still many questions concerning indications for prenatal and the best way of postnatal treatment. The aim of this study is to evaluate indications for prenatal valvuloplasty and outcome of fetuses in whom percutaneous balloon aortic valvuloplasty was performed.

Methods: 14 fetuses underwent prenatal treatment in two different institutions. 8 interventions was performed abroad until June 2011 and 6 in the national center for fetal therapy since then. All neonates were treated in four different national centers for pediatric cardiology and cardiac surgery.

Results: There was one intrauterine death related to the prenatal intervention and one due to placenta insufficiency (mother was heavy smoker). There were not complications related to the intrauterine intervention on the national basis. 11 neonates were born in 3 different centers, 4 by CC, 7 vaginal delivery, 1 still in utero. There was not difference in neonatal conditions born by CC or vaginal delivery. In 5 patients Norwood operations was performed, hybrid procedure in one, neonatal aortic balloon valvuloplasty in 5. Just in one aortic valvuloplasty was necessary in the first day of life. 1 patient died afer Norwood procedure due to sepsis, two after balloon aortic valvuloplasty, with heart failure and pulmonary hypertension. All other are in good general condition. Children after aortic valvuloplasty did not require aortic valve replacement.

Conclusions: Preliminary results of the new national program for fetal cardiac interventions are promising. Underlying anatomy is the main factor influenced the method of postnatal treatment. Detailed discussion is needed to develop the best method for treatment of neonates and infants with severe aortic stenosis after prenatal interventions.