10 Years Experience of Interventional Treatment of Tachyarrhythmias in Newborns and Infants.

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Basics: To perform single centre experience of managing tachyarrhythmias in infants 1 year of life.
Methods: From 2001 to 2012 entered 95 infants with tachyarrhythmias with age 5.7 months (range 1 day – 12m) and av. weight 6.5kg. (min 2.5kg). 27.4% (n=26) were under 3 months of age, and 13.7% (n=13) were newborns. In 50% of infants arrhythmias appeared during neonatal and in 13.7% in antenatal period. Arrhythmias were represented by the WPW syndrome in 59%, atrial flutter in 20%, ectopic atrial tachycardia in 16% and ventricular premature beats in 5% of cases. Combination of arrhythmia and CHD were detected in 32%. Most frequent CHDs were VSD, ASD, PDA and coarctation of the aorta. 78% of the total amount of infants were operated. The rest were discharged after selection of the efficient antiarrhythmic therapy. The majority of infants (62%) had concealed form of the WPW syndrome, 25% - manifesting and 13% - intermittent forms. WPW syndrome was clinically apparent by paroxysmal or incessant life-threatening tachycardia. Clinical signs of NYHA class 1 heart failure had 60% of infants, NYHA class 2 - 24%. Arrhythmogenic cardiopathy was detected in 22% of infants.

Results: All infants with tachycardia underwent electrophysiological examination. Ablation (RFA) performed in 40 infants. In some patients we made transesophageal electrostimulation, Sili operation, single-stage correction of CHD and arrhythmia. 64.5% of patients with WPW syndrome had left-sided accessory pathways, 27% right, 8.5% septal. The RFA was efficient in 97.5%. In 1 infant we repeated RFA because of recurrent tachycardia returned in a day after 1st intervention. There were no complications after RFA. Infants were discharged on the 3-5 day after RFA. By the moment of discharge infants presented regression of heart failure signs and as well as signs of arrhythmogenic cardiopathy. Control long-term examination showed no tachycardia attacks.

Conclusion: Tachyarrhythmias can present early in infants and in paroxysmal or incessant life-threatening character they cause decompensation of heart failure soon after birth. The leading cause of medication-refractory tachyarrhythmias in infants under 1 year is WPW syndrome. Interventional treatment of tachyarrhythmias in infants is efficient but should be performed by absolute indications.