600 PERCUTANEOUS CATHETER ABLATIONS IN CHILDREN AND ADOLESCENTS - ONE CENTER EXPERIENCE

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Introduction:
Percutaneous catheter ablation (PCA) in pediatric patients was first described in early 1990s. High efficacy of the method and low complication rate allowed these procedures to be offered as first-line therapy to many children with tachyarrhythmia. In our Institute the ablation therapy has been performed since 2003. We present our data.

Material and Methods:
Six hundred ablation procedures were performed in 523 children and adolescents (259 girls and 264 boys). Age ranged from 3 months to 19.2 years (mean 14.9±2.9 years), 470 of them had normal heart anatomy. In the most of the procedures we used only two catheters diagnostic and ablation which were introduced by puncture of femoral vessels.

Results:
The procedure targets were:
- accessory pathways (AP): left – 174, right – 164, left and right – 4,
- atrio-ventricular reentry tachycardia (AVNRT) – 154,
- ectopic atrial tachycardia (EAT) – 27,
- long R-P’ tachycardia – 11,
- junctional ectopic tachycardia (JET) – 5,
- multifocal atrial tachycardia/atrial fibrillation – 6,
- ventricular arrhythmia – 55 procedures.

Radiofrequency (RF) catheter ablation was performed in 593 pts including CARTO XP system in 69 pts, crioablation in 7.

Time of fluoroscopy ranged from 4.0 to 84.3 minutes (mean 26.7±15.9 minutes), RF application time was from 0.7 to 30 minutes (mean 5.9±4.99 minutes). The longest application time were in pts with Ebstein’s anomaly (mean 14,5 minutes).

Complications:
The major complication was atrioventricular block follow by pacemaker implantation in 2 pts: 1 boy with combine fascicular and AVNRT tachycardia and 1 infant with congenital JET (0,3%).
In 4 pts - false aneurysm occurred (closed by thrombin injection), in 2 atriovenous fistula which closed spontaneously.

In 66 (11%) children ablation has to be repeated, most often in patients with right AP (24/164, 14,6%), left AP (17/174, 9,8%) and ventricular arrhythmia (7/55, 12,7%).

Conclusions:
In children and adolescents with tachycardia percutaneous catheter ablation is effective and save method of treatment, but recurrence of arrhythmia is possible.
In patients with abnormal heart anatomy the procedure may be difficult and applications lasted longer.