Catheter Ablation in Pediatric Permanent Junctional Reciprocating Tachycardia

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Background
Permanent junctional reciprocating tachycardia (PJRT) is an infrequent type of atrioventricular reentry tachycardia, which substrate is a right posteroseptal accessory pathway (AP) with decremental properties. Almost incessant in infancy, the risk of tachycardia-induced cardiomyopathy is high. Management of this arrhythmia is challenging because of its frequent refractoriness to drug therapy. Catheter ablation (CA) has arisen as a safe and effective therapeutic option.

Objective
To describe the characteristics and results of CA of PJRT in children.

Methods
We retrospectively reviewed 21 CA in children with PJRT at our institution between July 2009 and December 2014.

Results
PJRT was diagnosed within the first year of life in 57% of the cases. Antiarrhythmic medications were used as first line therapy in 85%, while CA was performed as first line therapy in only 3 patients. Amiodarone was the most frequent used drug: 16 patients were or have been treated by long term Amiodarone prior to CA procedure. Amiodarone was associated with at least one other antiarrhythmic drug in half of the patients. 23 CA procedures were performed in 21 patients with a success rate of 86%. The mean age at CA procedure was 9 years and mean weight 30 kg. No major complications were reported. All AP were localized to the posteroseptal area. CA was performed through the coronary sinus with a 4 mm irrigated-tip radiofrequency catheter. Angiography of the left coronary artery was performed prior and after radiofrequency delivery for all children weighting less than 20 kg. Recurrence occurred in 3 patients: one year after the CA procedure for one patient, and within 24 hours for 2 patients. Overall, at one-year follow-up, all by one lost of follow up patient were on sinus rhythm without drug therapy.

Conclusion
CA is an effective therapeutic option for PJRT in children. Success rate is high, and despite recurrence antiarrhythmic medications can be stopped in all patients.