Outcome of radiofrequency catheter ablation in children - a current update

Hanslik A., Mujagic A., Albinni S., Michel-Behnke I., Marx M.
Division of Paediatric Cardiology, Medical University of Vienna, Austria

OBJECTIVES: Radiofrequency catheter ablation (RFCA) is a well-established treatment for many paediatric tachyarrhythmias. Recently, several studies reported high success and low complication rates after using cryoenergy for catheter ablation in children. However, risk of recurrence seems to be increased after cryoablation. To objectively discuss the possible advantages and disadvantages, data on success and recurrence rates of RFCA under current conditions in children are needed.

METHODS: Retrospective cohort study of consecutive children undergoing RFCA at a single paediatric cardiology centre during the last two decades.

RESULTS: 290 children (median age 13.7 years (min 0.7; max 18.6)) underwent RFCA. Overall success rate was 96.3%. Success rate was significantly lower after RFCA of right anterior and right anterolateral accessory pathway (AP, 80%). Overall mortality was 0%, and there was only one (0.3%) major complication in an infant with pericardial haemorrhage. 2.3% of children developed vascular complications at the puncture site. None of the patients had persistent atrioventricular block or ST-elevation. Over a median observation time of 8.8 years, the overall recurrence rate after RFCA was 9.5%. Recurrence rate was significantly lower in patients with AVRT (2%), and significantly higher in patients with right lateral AP (55%).

CONCLUSIONS: Under current conditions, RFCA can be performed with high success and very low complication rates in children. Recurrence rates after RFCA are substantially lower than those reported after cryoablation in the literature. Therefore, RFCA is still considered the method of choice for paediatric tachyarrhythmia in our institution.