Electrocardiographic and 24h-Holter characteristics of patients with Ebstein anomaly

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Objectives: A retrospective cohort study was conducted in a tertiary cardiac surgery centre, to determine the electrocardiographic and 24-Holter characteristics of patients with Ebstein anomaly.

Patients and Methods: Echocardiographic, electrocardiographic and 24-Holter characteristics of 41 patients with Ebstein anomaly patients diagnosed between January 2011 to November 2014 were retrospectively reviewed.

Results: Twenty one patient were male. median age at referral to our clinic was 2 years. Among 41 patient 13 were referred during newborn period, 5 were between 1month and 1 year and 23 were between 1 year and 18 years. All of the patients had either atrial septal defect or patent foramen ovale. Echocardiographic accompanying pathologies were ventricular septal defect (3/41), corrected transposition of the great arteries (3/41), anatomically corrected transposition of the great arteries (1/41) and all newborn patients had ductus arteriosus. Electrocardiography revealed first degree heart block (2/41), atrial flutter (1/41), nonspecific intraventricular conduction delay/block (5/41), pre-excitation-WPW pattern (5/41), right bundle branch block (3/41), complete heart block (1/41), and supraventricular extrasystole (1/41). Additionally 24-hour-Holter monitoring revealed in 4 patients intermittent pre-excitation (total number of pre-excitation 9), 6 patients first degree heart block (total number of first degree heart block 8), 1 patient ectopic atrial rhythm. Eleven of the 24-hour-Holter monitoring were in normal limits.

One patient died in the neonatal period due to intractable supraventricular tachycardia (atrial flutter) resulting in heart failure. Pacemaker implantation was performed to another patient with complete AV block. Her diagnosis was corrected transposition of the great arteries with Ebstein anomaly. Five patients underwent six catheter ablation of an accessory pathway procedure. One of the patients had accessory pathway with Mahaim-type preexcitation. Also one patients ablation procedure was unsuccessful due to epicardial accessory pathway.

Conclusions: In our series most common diagnosis were first degree heart block 8/41 (20%) and preexcitation and/or Wolff–Parkinson–White syndrome prevalence was 9/41 (22%). Intermittent rhythm disturbances can be diagnosed with 24-hour-rythym-Holter recordings. We suggest 24-hour-rythym-Holter monitoring for all patients diagnosed with Ebstein anomaly with regular intervals.