



Presentation Abstract

Session: APS.309.01-Adult Congenital Heart Disease: Risk Stratification and Comorbidity

Presentation: 9967 - Microvolt T-wave Alternans in Adults with the Chosen Forms of Congenital Heart Disease

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Abstract: Introduction. Sudden cardiac death (SCD) in adults with congenital heart diseases (CHD) is usually caused by ventricular arrhythmia (VA). Among the noninvasive methods of risk stratification for SCD is microvolt T-wave alternans (MTWA), reflecting repolarization inhomogeneity. We sought to determine the incidence of MTWA among adults with chosen forms of CHD as well as its coincidence with VA and other findings presumably associated SCD.

Methods and Results. The study group: 102P with CHD characterized by pathology within right ventricle or single ventricle physiology (transposition of the great arteries after atrial switch, univentricular heart, Ebstein's anomaly, congenitally corrected transposition of the great arteries, Eisenmenger syndrome, double-outlet right ventricle, common arterial trunk, unoperated tetralogy of Fallot). Controls: 45 volunteers age and sex-matched. All subjects underwent spectral MTWA test, ambulatory ecg monitoring, cardiopulmonary test, BNP assesment. MTWA positive and indeterminate were labeled 'abnormal' and were present more often in the study group, compared to controls (39,2% vs 2,3%, p=0,00001). Among subjects with abnormal MTWA sustained ventricular tachycardia (sVT) was observed more often compared to MTWA(-): 19,4% vs 3,6%, p=0,026. The patients with abnormal MTWA had a lower blood saturation (p=0,047), more often were males (p=0,031), had higher NYHA class (p=0,04), worse cardiopulmonary parameters: %PeakVO₂ (p=0,034), % HRmax (p=0,003). Factors associated with abnormal MTWA: sVT (OR=20,7 p=0,037), male gender (OR=15,9 p=0,001) in multivariate regression; in univariate analysis: male gender (OR=2,7, p=0,021), presence of VA (OR=2,6, p=0,049), NYHA > I (OR=2,06, p=0,033), %HRmax, %PeakVO₂, VE/VCO₂ slope (OR=0,94, p=0,005; OR=0,97, p=0,042; OR=1,05, p=0,037).

Conclusions. The abnormal MTWA occurs significantly more often in adults with the

chosen forms of CHD than among healthy subjects. The probability of abnormal MTWA increases in patients with malignant VA, in males and among subjects with heart failure and cyanosis. MTWA might be of potential role in risk stratification for SCD.

Disclosures: **O. Trojnarska:** None. **A. Cieplucha:** None. **A. Bartczak:** None. **S. Grajek:** None.

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