SIGNAL-AVERAGED P WAVE OF ECG AS A MARKER OF ATRIAL ELECTRICAL INSTABILITY IN PATIENTS WITH RIGHT VENTRICULAR DYSFUNCTION

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Background: Severe pulmonary hypertension (PAH) leads to right ventricular dysfunction and is associated with different atrial arrhythmias. In PAH patients the echocardiographic Tei-Index is used for monitoring right heart function. The signal-averaged P wave of ECG **(**SA-ECG) has been shown to have a potential role in identifying patients at risk of developing paroxysmal atrial fibrillation and those likely to change from paroxysmal to chronic atrial fibrillation. The aim of the present study was to define the correlation of the Tei-Index with parameters of P wave triggered and bidirectional P wave SA-ECG.
Material and methods: A total of 18 patients (14 men, 4 women) with normal sinus rhythm and a mean age of 67 ±10 yr (BMI 27.6 ±5.1 kg/m²) were included into the study. Right ventricular (RV) Tei-Index was calculated from the sum of isovolumetric contraction time and relaxation time divided by ejection time. Furthermore P wave triggered P wave signal averaged ECG was performed from an X, Y, and Z lead system.
Results: There was a statistically significant correlation between Tei-Index and filtered P wave duration (r=0.53; P=0.023). Tei-Index did not correlate with the root mean square voltage of the last 20 ms of the P wave (r=-0,16; P=0.52).
Conclusions: Correlation of RV Tei-Index with P wave duration indicates that this echocardiographic measurement is not only a marker of the right heart function, but also an indicator of electrical instability that could be useful to detect patients at risk for atrial arrhythmias.