

P1-14

Cardiac repolarization parameters in childhood obesity.

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Studies in adults demonstrated an association of obesity and prolongation of cardiac repolarization with the potential for an increased risk of ventricular arrhythmia and sudden cardiac death. The aim of this study was to evaluate potential alterations in cardiac repolarization in obese children. **METHODS:** 215 consecutive healthy pediatric volunteers, who participated in the LIFE Child Study at the LIFE Leipzig Research Center for Civilization Diseases from 2011 to 2014 were prospectively enrolled and their ECG's were analyzed. **RESULTS:** There is a significant prolongation of absolute QT and corrected QT interval ($p=0.005$), T peak-to-end ($p<0.001$) and QT dispersion ($p=0.013$) in obese compared to lean children. Female patients showed overall longer QT intervals than male patients ($p=0.002$). Despite significant differences in estradiol levels in male and female probands ($p=0.001$) there was only an influence of estradiol on absolute QT interval ($p=0.013$) but not on the corrected QTc interval ($p=0.7$). **CONCLUSION:** Childhood obesity causes a prolongation of QT and QTc interval with a more evident effect in female patients. Furthermore, an increase in cardiac electrical heterogeneity could be demonstrated with rising BMI.