

Increased P wave and QT dispersion in children with Down Syndrome without Congenital Heart Disease

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Objective:Previously reported studies have shown that patients with DS without concomitant congenital heart disease (CHD) may exhibit cardiac functional abnormalities, valvular dysfunction, bradycardia and AV block. Thus, due to increase in life expectancy in persons with DS, these persons are needed long-term follow-up in cardiovascular field. The aim of the present study to investigate the P-wave, QT and corrected QT dispersions which are reflects the tendency for atrial and ventricular arrhythmias in children with DS without CHD.

Method:The standard 12-lead electrocardiograms of 100 children with Down's syndrome without congenital heart defects and 100 age-and-sex matched healthy children were prospectively assessed by a blinded specialist.

Results:Maximum durations of P-wave and QTc, dispersions of P-wave, QT and QTc were found significantly higher in DS group compared to without DS group. A positive correlation was found between P-wave dispersion and age in patients with DS. However, we could not find any association between the QT, QTc dispersion and age in DS group. And also any correlation were not determined between P, QT and QTc dispersions and gender.

Conclusions: In conclusion, our results showed that children with DS are more prone to ventricular and atrial arrhythmias due to the prolonged durations of PW, QT and QT dispersions. Thus, all children with DS should be carefully assess with electrocardiography according to the possible atrial and ventricular arrhythmias during the clinical follow up even in the absence of concomitant CHD.