Corrected QT interval in children with congenital deafness from high consanguinity population.

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Background: Long QT syndrome is characterized by prolongation of the QT interval. Patients are prone to syncope and sudden death due to ventricular arrhythmias. The disease can be familial, with or without deafness. In some of the patients the prolongation of corrected QT interval appears during rhythm acceleration. In this study we aim to check the corrected QT interval in congenitally deaf children from high consanguinity population.

Methods: We performed a rest and exercise electrocardiogram for 97 children with congenital deafness (group 1) and 96 healthy children (group 2). Gender distribution was 54:43 and 47:49 Males / females in group 1 and 2 respectively. Average age of the children was 11.5 +/- 6.5 years. Family history of syncope, arrhythmia, deafness, convulsions and sudden death were included. The corrected QT interval (QTc) was calculated by Bazett's formula.

Results: In group 1, we found 3 children with QTc > 0.440. Range 0.440-0.457 msec in rest ECG. During exercise QTc was > 0.440 msec in another 8 children. Range 0.442-0.569 msec. Positive family history of syncope (2), convulsion (2), sudden death (13), arrhythmia (3) and deafness (5) was found in 25.7% of congenitally deaf children. In group 2 we found 2 children with QTc interval of > 0.440 in rest electrocardiogram and 3 during exercise. Range 0.444-0.495 msec.

Conclusion: Long QT is more frequent in children with congenital deafness from high consanguinity population. Exercise test in these children may uncover those with normal QT interval at rest. High consanguinity population and family history of syncope, sudden cardiac death or convulsions warrants further investigation of the disease.