

Flecainide test in paediatric population: safety, effectiveness and risk factors for a positive test

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Introduction

Flecainide test is a pharmacological test used in order to unmask Brugada-pattern EKG in patients with a suspected Brugada Syndrome(BrS).The aim of this study is to review data about Flecainide test and to predict the conditions for a positive test in our pediatric Arrhythmia Unit.

Methods

We retrospectively reviewed all our standardized Flecainide test (2mg/kg in 10min) performed from 2010 to 2016 in pediatric patients.Clinical data (demographic data, familial and personal clinical history, symptoms),EKG changes (basal and with fever),SCN5A mutation and data concerning Flecainide test are described and analysed.

Results

We reviewed 81 pediatric patients, by gender (f54.3%,m45.6%),median age 10.7y (SD4.2,IQR6).Familial clinical history of BrS was present in 65 patients(80.2%).Of these patients,29.6% had first-degree relatives with BrS.

We observed 67/81 negative Flecainide test (82.7%), 11/81 positive (13.5%) and 3/81 uncertain (3.7%).Four patients required monitoring during overnight hospitalization.One of the 11 positive Flecainide test had an abnormal EP study.

Syncope was the main reason to perform Flecainide test(22.2%),but we detected other symptoms (palpitations,dizziness,febrile seizures/unspecified convulsions and recovered sudden death).No symptoms in 58% of patients,so the test was performed for other reasons.

Statistical analysis by familial history,basal and febrile EKG,syncope and febrile seizures and SCN5A mutation was performed.We detected 8/11 positive Flecainide test had familial history for BrS (72.7%) and 9/11 had abnormal basal EKG defined by incomplete RBBB or 2-3 BrS pattern.Flecainide test was positive in 2/3 cases of abnormal febrile EKG(66.6%),and uncertain in the other one. Syncope was the main symptom in the positive Flecainide test patients(3/11, 17.6%);the other patients had no related symptoms.Febrile seizures were detected in 5/81 patients;one of them had a positive Flecainide test and 1 uncertain.

Within the 11 positive Flecainide test,3 of them had SCN5A mutation (27.2%).No SCN5A mutation was detected in patients with febrile seizures,and 1 was detected in patient with syncope.

Conclusions

(1)We did not detected severe complications related with Flecainide test.(2)About 15% of our patients had a positive test,and the symptom most related with that was syncope.3)We detected the following risk factors for a positive Flecainide test: a)SCN5A mutation b)familial history for BrS c)having an abnormal basal EKG.