

## The Two Center Study Of Flecainide Efficacy And Safety In Childhood Arrhythmias With And Without Structural Heart Disease

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### Introduction

Historical CAST study findings in adults have led to concern about the safety of flecainide in the presence of structural heart disease (CHD), ischemia and impaired cardiac function. Extrapolation of an adult study to paediatric patients has been questioned in the recent era with its safe use in fetuses and children. We aimed to review the effectiveness and safety of flecainide use in two centres in the treatment of paediatric arrhythmias associated with normal hearts (NH), structural heart disease (CHD) and cardiomyopathy (CMP).

### Methods

We reviewed all patients receiving flecainide from 01/2005-07/2015 at two paediatric cardiology sites. Age at arrhythmia presentation, duration of arrhythmia treatment, ECG findings, patient outcomes and cardiac function were recorded. Flecainide efficacy, toxicity, and proarrhythmia rates were analysed.

### Results

There were 175 patients, 22 had CHD/CMP. A significant QRS widening (55% vs. 22%,  $p<0.0001$ ) or QTc prolongation (22% vs. 8%,  $p=0.05$ ) occurred more often in CHD/CMP patients. Moderate to severe cardiac dysfunction was observed more commonly in the CHD/CMP group compared to NH (50% vs. 17%,  $p=0.002$ ) at baseline. Three patients (1.7%) showed a decline in cardiac function secondary to CHD ( $n=2$ ) and incessant SVT ( $n=1$ ). Flecainide was discontinued only in one (5.3%) patient in CHD/CMP from centre one due to worsened LV function. Flecainide levels were abnormal in 9 cases and of which 2 developed wide complex tachycardia. There was no difference in proarrhythmia between the CHD/CMP and NH groups (5.3% vs. 4.0%,  $p=NS$ ). One infant died from other causes that was not linked to flecainide. Arrhythmia control did not differ between groups: CHD/CMP success = 19 (86%) vs. NH success = 116 (76%). CHD/CMP unsuccessful = 3 (13.6%) vs. NH unsuccessful = 35 (23%). Centre one success rate was 39 (52%) vs. centre two 92 (92%).

### Conclusion

Flecainide was well tolerated in this cohort with less than 3% discontinuation of medication due to adverse outcomes. There was no mortality even in CHD/CMP group. Flecainide success rate in controlling arrhythmia was higher in cases from the centre two. A larger study is warranted to further validate the safety and effectiveness of flecainide.