

## Monitoring Flecainide levels in Paediatric Arrhythmias

*Rehman R., Patel D., Taliotis D.*

*Department of Paediatric Cardiology, Glenfield Hospital, Leicester, UK*

### Introduction

Flecainide is a class 1c antiarrhythmic agent which acts on sodium channels to prolong the action potential. It has been shown to be effective and safe in management of childhood arrhythmias. Optimum dose ranges are between 1-8mg/kg per day. There is no consensus regarding at what intervals flecainide levels should be taken or whether they should be taken at all.

### Methods

We interrogated our hospital pharmacy system between 2010 to 2013 to identify all patients less than 16 year old who have been prescribed Flecainide long term. A retrospective study was carried out to identify dose regimen and serum Flecainide levels.

### Results

A total of 23 patients received Flecainide therapy between 2010 and 2013, 15 male and 8 female. All children had normal renal function. 20 patients were on treatment for supraventricular tachycardia and 3 for Ventricular Tachycardia.

10 patients were treated with multiple antiarrhythmic agents including Atenolol, Propranolol, Digoxin, Sotalol and Amiodarone.

The mean dose at commencement of therapy was 4.6mg/kg/day (range 2.6mg/kg/day to 6mg/kg/day). 12/23 patients were on twice daily regimens and 11/23 on three times a day. The mean maintenance dose was 6.2mg/kg/day (range 2.6mg/kg/day to 12mg/kg/day)

A total of 42 flecainide levels were taken over the 3 year study period. The average Flecainide level was 380µg/L. The lowest level was 5µg/L on 4mg/kg/day. The highest was 994µg/L on 10.5mg/kg/day.

A total of 3 levels were recorded greater than 800µg/L. 835µg/L on 9mg/kg/day, 922µg/L on 6mg/kg/day and 994µg/L on 10.5mg/kg/day. 28 levels were taken below 8mg/kg/day with only 1 level above 800µg/L (3.6%). 14 levels were taken above 8mg/kg/day with 2 levels above 800µg/L (14%).

### Discussion

3/42 patients had recorded levels above our cut off of 800 µg/L with only 1/28 being on less than 8 mg/kg/day and 2/14 above. At doses less than 8mg/kg/day Flecainide is relatively safe and within the therapeutic range. Even at doses above this only 2/14 patients recorded a high level. We feel the efficacy of treatment can be monitored using ECG's and levels need only to be considered in dosage above 8mg/kg/day or where there are clinical concerns about toxicity.