

# Efficacy and safety of home INR testing during Warfarin treatment for children and adults with congenital heart disease

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## Introduction

Warfarin remains the most commonly used anti-coagulant in the Paediatric population. Children with complex congenital heart disease remain one of the largest group needing oral anticoagulation with Warfarin.

Due to its complex pharmacokinetics dosage of Warfarin needs to be constantly adjusted based on the International Normalised Ratio (INR) for the individual patient.

The introduction of Point-of-Care INR testing has made home testing by children or their carers very convenient.

## Objectives

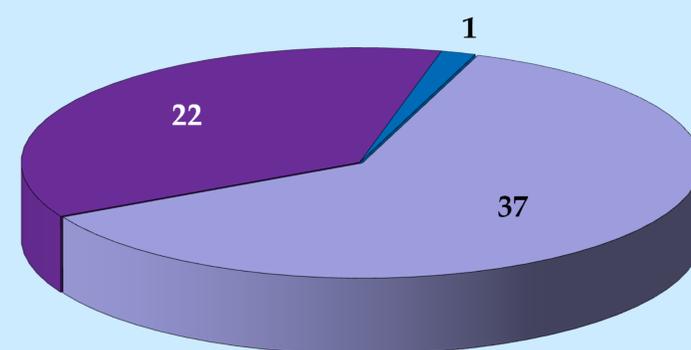
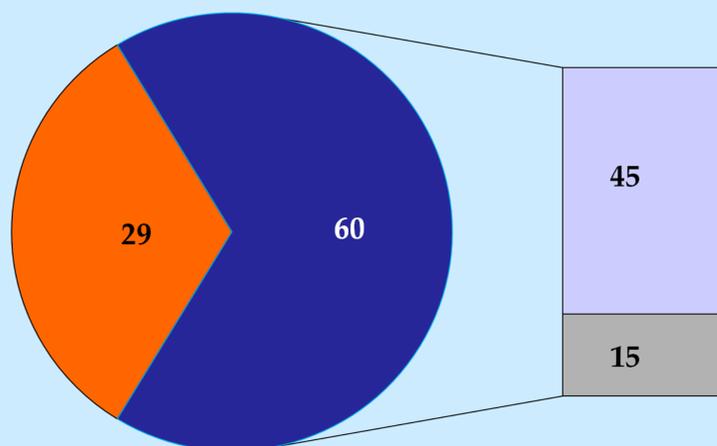
- Evaluate efficacy and safety of Home INR Testing
- Explore any differences in testing characteristics between Adults and Children and among different indications for the use of Warfarin

## Methods

INR testing was performed using the CoaguCheck XS® by patients or patient's carers at home and the results were telephoned to the specialist nurse at the tertiary centre. Data was prospectively entered into a purpose built database. The warfarin dose was prescribed by the Cardiologists using a local protocol. Data was collected over a period of eight years (09/07/2002 to 12/01/2011) in the database and analysed using SPSS v 12.0

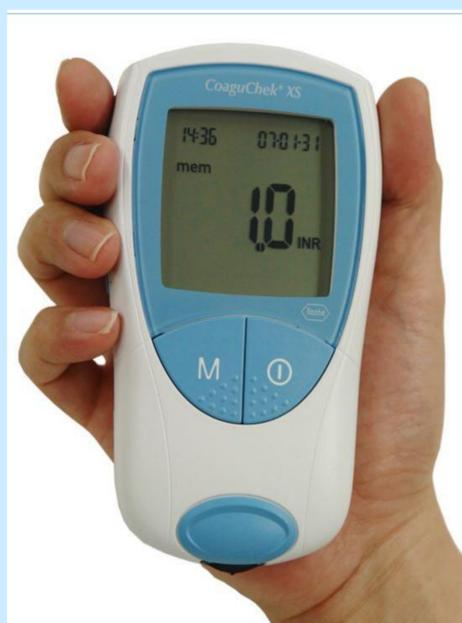
## Statistics

Mann-Whitney U test was used to test for significance in non-parametric data like the distribution of normal INR tests in adults and children. Student's T test was used for parametric variables. ANOVA was used to test for significance among different indications for the use of Warfarin. (P <0.05 taken as significant)



■ Not included ■ Included ■ Children ■ Adult

■ Fontan ■ Prosthetic valve ■ Other



## Results

**N = 60** patients.

Median follow up **3.5** years (Interquartile range 1.9 yrs)

Total cohort follow up **193.5** person-yrs

**Average test frequency** was **4.0 ± 3.8** tests per month

4.3 ± 4.2 in children and

3.2 ± 2.1 in adults (p=NS)

3.4 ± 4.1 in Fontan patients

4.4 ± 1.3 in mechanical valve patients (p=NS)

## Target range

**61.7 ± 19.5%** of INR results were within range

Adults vs. Children and Fontan vs. Valve both P=NS

16.9 ± 10.3% INR results were above range

21.4 ± 13.9% INR results were below range

## Major anticoagulation-related complications

2 patients

Intracranial haemorrhage in a child,

Thrombo-embolic stroke in an adult

## Conclusions

Home INR Testing by both adults and children with congenital heart disease provides effective anticoagulation control

No significant differences between adults and children, Fontan and Prosthetic valve in testing characteristics