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

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Objective: To evaluate the efficacy and safety of home INR (international normalised ratio) testing in children and adults with congenital heart disease (CHD) prescribed warfarin therapy.

Methods: Prospective data collection with retrospective analysis in consecutive patients with CHD discharged from University Hospital Leicester (UHL) following initiation of warfarin therapy. Home INR testing in all patients was performed using the CoaguCheK XS device (Roche Diagnostics GmbH, Mannheim, Germany). Results were telephoned to UHL and warfarin prescribed by the attending cardiologist according to internal protocols.

Results: Complete data was available in 60 of 89 patients (20 female, 45 children, mean age \pm SD 13.7 \pm 5.9, Fontan circulation=37, mechanical heart valve=22, other=1). Median follow-up was 3.5 years (interquartile range 1.9 years); total cohort follow-up was 193.5 person-years. Overall mean test frequency was 4.0 \pm 3.8 tests per month (4.3 \pm 4.2 in children and 3.2 \pm 2.1 in adults; 3.4 \pm 4.1 in Fontan patients and 4.4 \pm 1.3 in mechanical valve patients, both P=NS. 61.7 \pm 19.5% of INR results were within target range (adults vs children and Fontan vs valve both P=NS), 16.9 \pm 10.3% were above range and 21.4 \pm 13.9% were below range. Major anticoagulation-related complications occurred in two patients (intracranial haemorrhage in a child and thromboembolic stroke in an adult).

Conclusions: Home INR testing by adults and children with congenital heart disease provides effective anticoagulation control with acceptable test frequency and low major complication rate.