



**CONGENITAL CARDIOLOGY SOLUTIONS
(PEDIATRIC CARDIOLOGY AND ADULT CONGENITAL HEART DISEASE)**

ADVERSE EVENTS ASSOCIATED WITH ORAL ANTICOAGULATION OF PATIENTS WITH CONGENITAL HEART DISEASE

ACC Poster Contributions

Georgia World Congress Center, Hall B5

Monday, March 15, 2010, 3:30 p.m.-4:30 p.m.

Session Title: Practical Issues in Pediatric Cardiology

Abstract Category: Pediatric Cardiology

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Background: Adverse events from oral anticoagulation are increasingly recognized, however few studies evaluate this problem in patients with congenital heart disease (CHD). Our purpose was to evaluate predictors of attaining target international normalized ratios (INR) and of adverse events for patients with CHD on warfarin.

Methods: Retrospective cohort analysis of all 79 patients on warfarin monitored by the Yale Pediatric Cardiology Department, 2005-2008. Charts were reviewed for patient age, dates of warfarin use, target INR, indication, outpatient INR values, and dosages. Outcomes included INR values within target range, adverse events (minor/major bleeding and thrombosis) and warfarin related medical encounters (ER visits and hospitalizations).

Results: Mean patient-age was 19.8 (range 0-44) years; total patient-years on warfarin was 168. Target INR was achieved in 45% of all 1,885 INR values. INRs of patients <5 years old were less likely to be within target range than those of patients >5 (34% vs 46%, $P<0.001$). INR values for patients with a target INR of 2.5-3.5 were less likely to be in-range than were those with lower targets of 1.8-3.0 (40% vs 48%, $P=0.001$). Adverse events occurred in 20% (95% confidence interval (CI) 14-28%) per patient-year and warfarin-related encounters in 38% (95% CI 29-48%) per patient-year. Patients with lower target INRs were less likely to have adverse events than were those with higher targets (13% [95% CI 8-21%] vs 37% [95% CI 24-58%] per patient-year). Patients who attained target INR for >50% of measurements were less likely to have adverse events (5% [95% CI 2-14%] vs 33% [95% CI 23-47%] per patient-year) and warfarin-related encounters (9% [95% CI 4-19%] vs 62% [95% CI 47-80%] per patient-year).

Conclusion: Patients with CHD on warfarin attained their target INR <50% of the time. Children <5 years old and those with high target INRs are least likely to attain their target range. Lower target INR and patients who attained their target range for >50% of measurements were less likely to experience adverse events and medical encounters related to anticoagulation. Efforts to improve outcomes of anticoagulation should focus on these high risk groups.