Richard Rowe Award Finalist

P045
DOES A SMARTPHONE-BASED ECG RECORDING SYSTEM IN PEDIATRIC PATIENTS WITH PALPITATIONS IMPROVE DIAGNOSTIC YIELD?

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BACKGROUND: Palpitations in children can be caused by benign or malignant heart rhythms. Documenting the rhythm during symptoms (symptom-rhythm correlation) can be diagnostic but may be challenging to achieve. The AliveCor Kardia monitor is an event recorder developed to detect atrial fibrillation in adults, with its utility in children remaining less rigorously studied. We compared use of the Kardia to the Cardiocall event recorder, our institution's current standard event recorder for children with palpitations, through a prospective, randomized study of children presenting to pediatric cardiology for investigation of palpitations who require an event recorder for symptom-rhythm correlation.

METHODS AND RESULTS: Pediatric patients were randomized to receiving the Kardia or Cardiocall event recorder for rhythm documentation. Diagnostic tracings were defined as recording one pathologic arrhythmia or 3 sinus rhythm tracings. We assessed tracing quality, diagnoses obtained, and time to diagnosis between groups. Patients were provided surveys to assess their perceptions of using the devices. Differences between groups were assessed using chi square, Mann-Whitney U, and Fisher exact analysis. Eighty-four participants were enrolled: 43 (51%) receiving Kardia and 41 (49%) Cardiocall devices. There were 148 tracings recorded (84 from Kardia and 64 from Cardiocall devices). Seventy-three (87%) Kardia tracings were of adequate quality for interpretation compared to 58 (91%, p=0.48) from Cardiocall. Diagnostic tracings were achieved in 51% vs 34% (p=0.11) in the Kardia vs Cardiocall group at medians of 15 (6-39) and 8 (3-21) days, respectively (p=0.23). Diagnoses obtained using Kardia vs Cardiocall tracings were sinus rhythm in 67 (80%) vs 57 (81%) tracings, AVRT or AVNRT in 5 (7%) vs 3 (4%), atrial tachycardia in 2 (3%) vs 0, atrial fibrillation in 1 (1%) vs 0, and indeterminate in 3 (4%) vs 6 (9%), respectively. Patients who used the Kardia monitor were more often willing to use the device again (90% vs 42%, p=0.012), with no differences between groups in finding episodes easy to record (74% vs 100%, p=0.13), easy to transmit (79% vs 46%, p=0.11), or overall satisfaction (75 vs 58%, p=0.44).

CONCLUSION: Our preliminary data suggest the Kardia device provided adequate quality for rhythm strip interpretation with no difference compared to the standard Cardiocall monitor. Families who used the Kardia monitor were more willing to use the device again which should be considered when a symptom-rhythm correlation is needed.

P046
EXCESS TIME TO ADULT CONGENITAL HEART DISEASE CARE

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BACKGROUND: Over 90% of children with congenital heart disease (CHD) reach adulthood. Many of these individuals require lifelong cardiology care. Loss to follow-up predisposes patients to late recognition of cardiac complications. However, whether or not a young adult attends an ACHD clinic is a crude outcome variable. Rather, the time between the final pediatric visit and the first ACHD visit, over and above what was recommended by the referring pediatric cardiologist, is a variable that captures not only whether a patient was seen in an ACHD clinic but also the time delay, if any, in arriving there. Predictors of high excess time are unknown. Therefore, we sought to describe the excess time to ACHD care and determine risk factors for elevated excess time.

METHODS AND RESULTS: We conducted a retrospective cohort study including all patients with moderate or complex CHD who were 16-18 years of age at their last pediatric cardiology visit at the Alberta Children's Hospital or Stollery Children's Hospital. We excluded patients known to have relocated outside the catchment area of a study site, or having had a heart transplant. Medical records of the pediatric site and corresponding ACHD clinic were reviewed to determine appointment dates and clinical factors. Excess time between pediatric and ACHD care was defined as the time interval in months between the final pediatric visit and the first ACHD visit, minus the recommended time interval between these visits. Patients who had their first ACHD appointment earlier than the recommended time were assigned an index time of 0. Two hundred and eight-six patients (66% male, mean age 17.6 years at last pediatric appointment) were included of whom 29 (10%) had an index time >24 months. Mean excess time was 7.9 ±15.9 months. On logistic regression, having a pacemaker was