A45.E431
JACC March 9, 2010
Volume 55, issue 10A

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

IMPLEMENTING PULSE OXIMETRY SCREENING FOR CRITICAL CONGENITAL HEART DISEASE IN A COMMUNITY NURSERY

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
Presentation Number: 1229-408

Authors: *Gerard R. Martin, Elizabeth A. Bradshaw, Jeffrey Becker, Sandra Cuzzi, Sharon Kiernan, Nancy Nagel, Children's National Medical Center, Washington, DC, Holy Cross Hospital, Silver Spring, MD*

Background: Congenital heart disease (CHD) is the most common birth defect, yet it has no accepted screening program for early detection. Pulse oximetry has been shown to detect critical CHD but implementation to community hospitals has not been studied. A recent AHA/AAP Scientific Statement recommended that research on implementation be conducted.

Methods: Prior to beginning the study, meetings with leadership of a community hospital were held to determine how best to add pulse ox testing to normal newborn care. Educational meetings with nursing and medical staff were held to educate teams on the science and practice of testing. All newborns were eligible for this IRB approved study. All mothers giving birth were given an information sheet on the use of screening for critical CHD. Infants admitted to NICU, with suspected CHD or with risk factors for CHD were excluded from screening. Pulse ox was performed with a Massimo Radical-7 machine on the right hand and right foot after 24 hours of age in combination with PKU test prior to discharge. Newborns with pulse ox saturations equal to or less than 95% for either or both extremities or equal to or greater than a 3% difference between the two were considered positive. Decisions regarding additional testing or consultation were made by the responsible provider. Barriers to screening, length of time of screening and ability of suggested program design to screen all participants were recorded.

Results: Through 37 weeks of study, 3,409 infants were enrolled and 3,322 infants (97%) were screened. Mean screening time was 4.2 mins (1-6 mins) and mean pulse ox was 98%(91-100%). There was1 true positive for critical CHD (anomalous drainage of the superior vena cava to left atrium), 1 positive for non-critical CHD (dilated aorta) and1 false positive. The major barrier to performing screening identified was staff work levels when the nursery experienced high patient volumes.

Conclusion: Pulse oximetry can be performed in community hospitals without significant false positives and without additional staff. Commitment to the implementation process by a defined "champion" was essential to success. Pediatric Cardiologists should advocate for screening in community hospitals.