Pulse Oximetry Screening in Newborns:

A Policy Position from the American Heart Association

(November 2010)

Position

The American Heart Association continues to advocate for effective, comprehensive screening for critical (requiring surgical or catheter intervention in the first year of life) congenital heart disease in newborns. Pulse oximetry testing before discharge may be one important strategy for such screening as it can be an effective, noninvasive, inexpensive tool to assist in diagnosing critical congenital heart disease. While the risk for use of this screening is minimal, and the benefits are still being fully elucidated, the AHA reaffirms its current recommendation supporting consideration of pulse oximetry as a screening methodology (IIA – Level of Evidence C)* based on consensus science versus extensive randomized controlled trials.

Background

In 2009, the American Heart Association and the American Academy of Pediatrics published a joint statement addressing the use of pulse oximetry in newborns. This statement recognized that critical congenital heart disease is sometimes not detected in newborns until after their hospital discharge which results in significant morbidity and occasional mortality. The writing group concluded that routine pulse oximetry screening performed on asymptomatic newborns before hospital discharge, may aid in the detection of critical congenital heart disease. Also, routine pulse oximetry performed after 24 hours in hospitals that have on-site pediatric cardiovascular services appears to incur very low cost and risk of harm. However, the writing group stopped short of recommending pulse oximetry screening as standard of care until further research is done across larger populations and a broad range of newborn delivery systems. Since that time, additional studies have been published. One study showed that pulse oximetry screening can substantially reduce the postnatal diagnostic gap in critical congenital heart disease and false-positive results leading to unnecessary examinations of healthy newborns were rare. Another study showed that antenatal diagnosis combined with the physical examination detected 43 of 44 infants with critical congenital heart disease, but the authors recommended that a system of care should be defined to address education and referral issues. One final recent study showed that introducing pulse oximetry screening before discharge improved the total detection rate of critical congenital heart disease to 92%. The authors concluded that such screening is cost neutral in the short-term and may be cost-effective in the long-term with reduced need for preoperative neonatal intensive care and probable prevention of neurological morbidity.

Current Landscape
Requiring pulse oximetry screening for newborns has been a state level issue for several years with proposals to integrate it into insurance mandates and also have it accompany other mandatory screening. In September, 2010, the HHS Secretary's Advisory Committee on Heritable Disorders in Newborns and Children (SACHDNC) made a recommendation to add critical congenital cyanotic heart disease to the uniform newborn screening panel. Secretary Sebelius has 180 days to either adopt or reject the recommendation. It is then up to individual states to determine whether or not to adopt this recommendation for their panels, to determine the type of adoption (e.g., universally required, universally offered but not required, offered to select populations or by request, etc.) and to set a timeline. The AHA will continue to monitor the Secretary’s recommendation and will offer any expert guidance as needed.

*ACCF/AHA Classification of Recommendations (COR) and Levels of Evidence (LOE). Class IIA – Level of Evidence C indicates the benefit exceeds the risk, and it is reasonable to perform the procedure. The recommendation is in favor of the treatment or procedure being useful/effective. The evidence is based on consensus/opinion of experts, case studies or standard of care.

References: