

Community screening for sudden cardiac death- The Texas adolescent athlete heart screening registry (TAAHSR)

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The ability to predict sudden cardiac death (SCD) in young athletes using pre-participation screening is limited. Further, little is known about the natural history of factors related to SCD post-diagnosis. To date, screening approaches have used various methods including history, physical exam, ECG, and a small percentage referred for echocardiogram (ECHO). Such approaches have limited predictive values. Data comparing the effectiveness of combining ECG with ECHO for the screening of athletes for risk of SCD are lacking. In 2010, the Texas Adolescent Athlete Heart Screening Registry (TAAHSR) began screening a multiethnic population of high school athletes in Texas for hypertrophic cardiomyopathy and other SCD-associated conditions by using both ECG and limited 2D-ECHO, in addition to medical history. The objectives included: Determine the screening effectiveness of a combined ECG and ECHO method compared to ECG alone to identify conditions associated with SCD in young athletes; develop and validate ECG and ECHO screening criteria for LVH in young athletes; and prospectively examine the natural history of conditions associated with SCD. To date, over 6,000 athletes have been screened in TAAHSR events. Weight, height and BP are obtained prior to acquisition of a 12-lead ECG and limited 2D-ECHO, both which read by a cardiologist. If an abnormality is detected, referral for complete evaluation is made. Follow up data are obtained. Analyses of nearly 3,200 athletes indicate a prevalence of 0.2% of such conditions. Large-scale community screening in high school athletes using both ECG and ECHO is feasible and identifies previously unknown SCD-related conditions.

Biography

Lawrence graduated from Federal University of Pelotas, RS, and Brazil and has completed a fellowship in pediatric cardiology at the Hospital for Sick Children in Toronto, Canada. She received a doctorate in Pathology and Cardiovascular Sciences from the University of Toronto. Lawrence served as a Professor of pediatrics on the faculty of the Federal University of Rio Grande do Sul in Brazil where she supervised graduate students in the Masters Program for Pediatrics and Cardiology. She served for seven years as the Chief of the Pediatric Cardiology Division and Cardiac Pediatric Intensive Care Unit at Complexo Hospitalar Santa Casa, Porto Alegre, Brazil, caring for children and adults with all forms of congenital and acquired heart disease. Lawrence joined the Faculty at Baylor College of Medicine and Texas Children's Hospital as an Associate Professor, Section of Pediatric Cardiology, in March of 2011. Lawrence has been working for the past six years in screening young athletes for conditions known to be high risk for sudden cardiac death (hypertrophic cardiomyopathy, in particular). Lawrence is the Vice President of Science and Research for the Championship Hearts Foundation, Austin, Texas. Her work includes the recent development of a state registry (Texas Adolescent Athlete Heart Screening Registry-TAAHSRTM) in which important demographic, ethnic, electrocardiographic and limited echocardiographic data are being collected and will be followed longitudinally in this population of young athletes. She is a member of the Sports and Exercise Cardiology Council and Section, American College of Cardiology.

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