

Preventing The Sudden Death of Young Athletes From Hidden Heart Disorders

August 10 2009

(PhysOrg.com) -- Few things stun a community more than when a seemingly healthy high school or collegiate athlete suddenly dies during practice or in competition from a hidden heart disorder.

Each year, hidden genetic and congenital heart disorders claim the lives of a number of young athletes across the United States, including that of a 17-year-old Glenbrook High School student who collapsed and died on a soccer field on Aug. 22, 2008. Many more may have died jogging on their own, in pick up games or working out in a gym.

"The tragedy of such deaths is compounded when you realize that many genetic and congenital heart disorders can be successfully treated and managed with surgery or medication provided they are diagnosed in time," said Dr. Joel Hardin, director of pediatric cardiology, Loyola University Chicago Stritch School of Medicine, Maywood.

This is the time of the year when tens of thousands of young athletes in Illinois are revving up for the fall high school and collegiate sporting season. The Illinois High School Athletic Association requires that every athlete in the state must pass a physical before being allowed to practice or compete in sports. In collegiate sports, each team sets its own standard.

"Requiring physicals before allowing young people to participate in sports is always an excellent idea," said Hardin, who is highly experienced in identifying young athletes who might have a hidden

genetic or congenital heart disorder. "The problem is it's not very likely that these problems will be uncovered by just a routine physical."

It may not be easy to identify athletes who are at risk. Often they appear healthy and exhibit no visible symptoms of their disorder. There are some clues that can easily go unnoticed. These include fatigue, shortness of breath, irregular heartbeat, dizziness or chest pain that's out of proportion to the physical exertion.

Other symptoms may include fainting or suffering a seizure after being excited or startled.

"During normal physical activity, the heart of a young person with an inherited or congenital heart disorder can function normally. Symptoms may only become apparent when the heart becomes stressed during vigorous physical activity," Hardin said. "Symptoms should never be ignored, especially chest pain or fainting during exercise."

A young person with those symptoms should be screened for heart problems by their primary care physician or in the context of their school's athletic program. The screening should include a short questionnaire focused on personal and family history, specifically designed to detect clues to heart disease (e.g., chest pain, palpitations, fainting, family members with childhood heart disease or young relatives who may have died suddenly).

The screening should continue with a focus on high yield aspects of the physical examination such as checking for high blood pressure, detection of heart murmurs or non-cardiac abnormalities that might suggest risky genetic disorders (e.g., Marfan syndrome).

Finally, Hardin believes that at least one more test is extremely helpful and important during cardiac screening: an electrocardiogram or EKG.

An EKG can almost always provide clues to a diagnosis called hypertrophic cardiomyopathy, a potentially dangerous condition that accounts for the majority of sudden cardiac death in young athletes. The heart muscle of patients with this condition is thicker than normal, making it vulnerable to decreased cardiac output and more importantly, vulnerable to lethal cardiac arrhythmias.

A systematic cardiac screening program for child athletes similar to what Hardin describes has been in place within some European countries for many years. Italian investigators reported in 2006 (Journal of the American Medical Association) a more than four-fold decrease in the rate of athletes dying of cardiac causes after mandating such screening.

"If anything is found during screening, than the patient should be referred to a cardiologist for a further evaluation, potentially to include echocardiography (ultrasound of the heart), stress testing or even specialized genetic testing," Hardin said. "The good news is that once diagnosed and treated, many young people with these important heart problems can take active measures to reduce their risk, and they are much more likely to receive effective treatment in time to avert tragedy. Detection is the key."

Provided by Loyola University

Citation: Preventing The Sudden Death of Young Athletes From Hidden Heart Disorders (2009, August 10) retrieved 29 February 2024 from <https://medicalxpress.com/news/2009-08-sudden-death-young-athletes-hidden.html>

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