NCAA mandatory sickle cell screening program not enough to save athletes' lives

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In response to a lawsuit after a college football player died from complications due to sickle cell trait (SCT) during a workout, the NCAA implemented mandatory SCT screening of all Division I student-athletes.

A new study evaluated the impact of that policy and found that testing alone will help identify more than 2,000 athletes with SCT, but warns that screening alone will not prevent death.

"Although the policy is well-intentioned, screening is just the first step," says Beth A. Tarini, M.D., M.S., lead author of the study and assistant professor in the Department of Pediatrics and Communicable Diseases at the University of Michigan. "In addition to educating athletes and staff, precautionary measures need to be strictly enforced."

Tarini and her co-authors, M. Alison Brooks, M.D., a pediatric sports medicine physician at the University of Wisconsin, and David G. Bundy, M.D., an assistant professor of pediatrics with expertise in sickle cell disease at Johns Hopkins University, found that without a strictly enforced intervention, approximately seven NCAA Division I athletes would die suddenly as a complication of SCT during a 10-year period.

"In the end, enforcing safe training measures to protect all NCAA student-athletes—not just those in Division I—from sudden death related to SCT will benefit all athletes," says Tarini. "That's a win-win situation from a policy perspective."

The association between SCT and overexertion was first identified by the U.S. military in the 1970s. Instead of implementing a universal screening policy, the military enforced a universal intervention program and was successful in preventing all subsequent sudden death in recruits with SCT.

Tarini, Brooks, and Bundy found that the NCAA screening program requires that 144,181 student-athletes from a four-year cohort would need to be screened to prevent one death—assuming 100 percent intervention —and would cost somewhere between $1.4 and $3 million. A universal intervention policy like the one implemented in the U.S. military could prevent all deaths associated with SCT and overexertion as well as death among other athletes from other life-threatening complications like cardiovascular conditions.

"The culture in sports to push ourselves dangerously beyond our limits is powerful," says Tarini. "Implementing policies to identify those at risk provides a false sense of security if we aren't diligent about monitoring and protecting the health and safety of our student-athletes."

Tarini and colleagues analyzed NCAA reports, population-based SCT prevalence estimates, and published risks for exercise-related sudden deaths. They used these to estimate the number of sickle cell carriers and the number of potentially preventable deaths with mandatory SCT screening of NCAA Division I athletes. Using the most recently published, publicly available NCAA participation rates from academic year 2007-2008, they estimated the number of Division I athletes in a four-year cohort to be 81,073 males and 63,108 females.

Provided by University of Michigan Health System

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