Lack of basic evidence hampering prevention of sudden heart attacks in sport

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Big gaps in basic knowledge about the numbers and causes of apparently inexplicable heart attacks among young sportsmen and women are seriously hampering our ability to prevent them, says a sport and exercise medicine specialist in the *British Journal of Sports Medicine*.

At the very least, we need to start building reliable databases of all such events across sport, in a bid to start plugging these knowledge gaps, say Dr Richard Weiler and colleagues.

His comments come in the wake of the recent high profile case of premier league footballer, Fabrice Muamba, who collapsed on pitch, in front of a stadium packed with spectators, after sustaining a sudden heart attack.

Fortunately, Mr Muamba recovered, but cases like these, although rare, are still likely to occur despite screening programmes, and they are poorly understood, emphasises Dr Weiler.

These cases have prompted improvements in pitch-side and acute sports medicine, including emergency life support, defibrillation and the development of practical education courses and emergency care guidelines, says Dr Weiler.

None the less, he says: "We still lack many answers to basic questions about these afflictions. We do not know the exact numbers and trends in prevalence or incidence, and do not understand the [multiple causes] that

trigger sudden cardiac death in previously healthy athletes."

Issues that still need further investigation are the roles of gender and ethnicity, geography and genes, he says.

For example, Sub-Saharan Africa may be a "cardiac hotspot," with recent research linking sudden heart attacks to sickle cell trait.

Other research suggests that African Americans are three times more prone to sudden cardiac death/arrest than white athletes, although the rates vary considerably depending on the type of sport played.

And another study found that heart (ECG) tracing patterns differ between white and black athletes, although whether this is normal or indicates a higher risk for sudden cardiac death is not known, says Dr Weiler.

Screening programmes throw up a considerable number of false positive results, and it is still far from clear whether screening actually cuts the number of deaths, whether it is cost effective, and how to manage any abnormal findings, he says.

"It is vital that we start to answer these questions based on reliable science and evidence," he insists. "To achieve this, we propose the collection and recording of reliable data across sport of every sudden cardiac death/arrest," he writes.

But for this to happen, cooperation and collaboration will be needed among sporting organisations, federations, and clubs, in addition to the establishment of sport specific and national registries for these incidents, he suggests.

Dr Weiler cites a FIFA (International Football Federation) initiative.

This requires a medical assessment before a match for all FIFA competitions, and includes a recently established database for all its 208 member associations in a bid to build up an evidence base and better understand the condition.

"This is one of many efforts needed to fill knowledge gaps and enable us to mitigate the risks of sudden cardiac arrest/death," concludes Dr Weiler, adding that minimum standards of pitch-side medical care across all sports are essential.

More information: What can we do to reduce the number of tragic cardiac events in sport? doi 10.1136/bjsports-2012-091252

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