

## RISK FACTORS CHARACTERISTICS OF SADS

Sudden arrhythmic death syndrome (SADS) occurs more often during sleep or at rest than during exercise or emotional stress, and in some patients might be associated with epilepsy. This finding comes from a retrospective study of post-mortem examinations conducted between 1994 and 2010 at the Cardiac Risk in the Young Centre for Cardiac Pathology in London, UK. SADS is a form of sudden cardiac death in which the heart is morphologically normal, and the toxicology report is negative.

During the study period, 2,156 cases of sudden cardiac death were referred to the centre for assessment. Structural heart disease or another overt cause of death was established in 1,189 patients, leaving 967 deaths (45%) attributed to SADS. Of this group, 61% were male, and <5% had a family history of sudden death, or a previous diagnosis of arrhythmia, conduction disease, or syncope. Of note, 6.6% had a documented episode of epilepsy or seizure, which might be a risk factor for SADS. “A diagnosis of epilepsy, particularly in children,” say the researchers, “should therefore prompt a cardiac evaluation including an electrocardiogram in addition to neurological assessment.”

Death occurred at rest or during sleep in 82% of patients, which is when vagal autonomic tone is likely to be dominant. This trend was particularly marked in adults (aged 18–35 years), which the investigators believe “raises the possibility of Brugada syndrome as the cause [of SADS]”. Death occurred with exercise or emotional stress in only 16% of patients, particularly in males and those aged <18 years, which the researchers think might be associated with “undiagnosed ... catecholaminergic polymorphic ventricular tachycardia and long QT syndrome”.

In 5% of patients with SADS ( $n=44$ ), the investigators were able to assess family members for inherited cardiac conditions. In 20 families, a positive diagnosis was made: 17 with Brugada syndrome, two with long QT syndrome, and one with dilated cardiomyopathy. Routine molecular autopsy was not available for the patients included in this study but, given their findings, the investigators believe that “molecular autopsy should now ... form an integral part of the assessment of sudden unexplained death”.

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**Original article** Mellor, G. *et al.* Clinical characteristics and circumstances of death in the sudden arrhythmic death syndrome. *Circ. Arrhythm. Electrophysiol.* doi:10.1161/CIRCEP.114.001854