

# Testing and family screening lacking among young victims of sudden cardiac arrest

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Less than 4% of relatives of young cardiac arrest victims receive information on family screening that could prevent further deaths, according to research presented today at ESC Congress 2019 together with the World Congress of Cardiology.

"When a patient under 45 dies from [sudden cardiac arrest](#), the probability of an inherited [cardiac disease](#) is highly likely and accurately identifying the cause is crucial for relatives," said study author Dr. Ardalan Sharifzadehgan of the Paris Sudden Death Expertise Centre (Paris-SDEC), France.

"All first-degree relatives should be advised to undergo family screening and eventually [genetic testing](#) if an inherited cardiac disease is suspected," he continued. "This helps clarify the diagnosis of their loved one and can trigger [preventive measures](#) such as lifestyle modification, beta-blockers, or an implantable cardioverter-defibrillator (ICD) to avoid deaths in relatives."

The study was conducted in cardiac arrest patients under 45 who were alive when they arrived at the hospital, but subsequently died in the intensive care unit (ICU).

Performance of diagnostic tests in patients was suboptimal. Coronary angiograms were performed in 18%, brain and chest computed tomography (CT) scans in 25%, and transthoracic echocardiography (TTE) in 29%. Only 11% of victims had an autopsy and 1.4% had blood

samples collected for further genetic testing after death. Finally, just 3.5% of families were told about screening.

"While doing these examinations in 100% of patients is ideal, it won't always be realistic as some have circulatory issues that prevent accurate testing," said Dr. Sharifzadehgan. "Around two-thirds of sudden cardiac arrest patients that are alive at hospital admission die in ICU. Survivors undergo more examinations and relatives receive more information on family screening. This shows that early systematic investigations are fundamental to understanding the underlying cause, and better follow-up of families is needed after fatal events."

A specific cause of death was not identified in more than half of patients in the study (56%). "We believe this is due to the lack of core cardiac testing during hospitalisation, such as CT scans, TTE, and coronary angiogram," he said. "In addition, there was minimal autopsy and genetic testing done after each death, leaving the study void of data to determine a specific cause or cardiac diagnosis and stop future deaths in family members."

A specific cause of [death](#) was identified in 44% of patients. The causes were [acute coronary syndrome](#) (45%), structural non-[ischaemic heart disease](#) (26%), [pulmonary embolism](#) (14%), chronic coronary artery disease (10%), and non-structural heart disease (1.8%).

The study was conducted using Paris-SDEC registry data on 18,622 out-of-hospital cardiac arrests in the Paris area between 2011 and 2016. Of those, 3,028 were admitted alive to ICU at 48 hospitals. Of the patients admitted alive to ICU, 2,190 died in ICU, including 367 patients under 45 who were the focus of the current study.

**More information:** "Lack of early systematic investigations among young victims of sudden cardiac arrest" ESC Congress 2019 together

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