Cardiac disorder may affect broader range of patients than previously reported

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Stress cardiomyopathy (a transient form of acute heart failure triggered by stressful events) appears to have clinical characteristics that are broader than reported previously, including younger patients, men, and patients without an identifiable stressful trigger, according to a study in the July 20 issue of *JAMA*.

Stress cardiomyopathy (SC) primarily affects postmenopausal women and is characterized by acute, profound, but reversible left ventricular (LV) dysfunction in the absence of significant coronary artery disease, according to background information in the article. "Various aspects of its clinical profile have been described in small single-center populations, but larger, multicenter data sets have been lacking so far. Furthermore, it remains difficult to quickly establish diagnosis on admission."

Ingo Eitel, M.D., of the University of Leipzig, Germany, and colleagues conducted a study to comprehensively define the clinical spectrum of SC and to examine the usefulness of a set of cardiovascular magnetic resonance (CMR) criteria that might aid in diagnostic decision making in suspected SC. The study was conducted at 7 tertiary care centers in Europe and North America between January 2005 and October 2010 among 256 patients with SC assessed at the time of presentation at the centers as well as 1 to 6 months after the acute event.

Patients with SC were an average age of 69 years old; 89 percent (n = 227) were women. Eighty-one percent of patients (n = 207) were

postmenopausal women, 20 women (8 percent) were 50 years of age or younger; men accounted for 11 percent of cases. In 71 percent of patients (n = 182), a significant stressful event less than 48 hours before presentation could be identified; triggering conditions were emotional stress in 30 percent of patients, and physical stress in 41 percent. Upon presentation at the care center, electrocardiograms (ECGs) showed abnormalities in 87 percent of patients. Coronary angiography showed healthy coronary arteries in 193 patients (75 percent). CMR imaging detected ballooning patterns [a certain appearance of the heart muscle] with moderate to severe reduction of LV function in all patients and 4 distinct patterns of regional ventricular ballooning.

"Stress cardiomyopathy was accurately identified by CMR using specific criteria: a typical pattern of LV dysfunction, myocardial edema [swelling], absence of significant necrosis [cell or tissue death]/fibrosis [formation of excess fibrous connective tissue], and markers for myocardial inflammation. Follow-up CMR imaging showed complete normalization of LV ejection fraction [a measure of how well the left ventricle of the heart pumps with each contraction] and inflammatory markers in the absence of significant fibrosis in all patients," the authors write.

The researchers note that their data indicate that only two-thirds of patients had a clearly identifiable preceding stressor, whereas in previous reports the percentage with preceding emotional or physical triggers was as high as 89 percent. "Thus, our large multi-center cohort demonstrates that the absence of an identifiable stressful event does not rule out the diagnosis, and, hence, precipitating mechanisms may be more complex, such as involvement of vascular, endocrine, and central nervous systems. Such clinical heterogeneity could contribute to ambiguity in the recognition of SC and thereby affect potential management strategies. Consequently, enhanced awareness and recognition of a broad clinical profile of SC as demonstrated in the current study is mandatory for

correct diagnosis and treatment among patients with suspected SC."

The authors add that CMR imaging may provide incremental diagnostic information and could allow for verifying all relevant functional and tissue changes and therefore might contribute to the establishment of or rule out the diagnosis of SC at the time of acute clinical presentation. "The combination of typical regional wall motion abnormalities, the presence of reversible myocardial injury, and the absence of significant irreversible tissue injury may serve as a very useful set of diagnostic criteria and should be prospectively tested."

More information: JAMA. 2011;306[3]277-286.

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