Author's Reply

Etiology of Takotsubo Cardiomyopathy

We appreciate the letter by Drs Kounis and Filippatos regarding our recent paper entitled “Association of Takotsubo cardiomyopathy and long QT syndrome”. The etiology of Takotsubo cardiomyopathy is not fully elucidated; however, in the majority of cases, emotional or physical stress was reported as a triggering factor.

One possible mechanism of this specific syndrome is stunned myocardium due to coronary spasm, including both multivessel epicardial coronary artery spasm and microvessel spasm. Epicardial coronary artery spasm was inducible afterwards in some limited cases2–5; however, angiographic spasm or slow flow was not demonstrated at the acute phase while the ST-segment was still elevated. Coronary microcirculation has also been assessed using Doppler guidewire, myocardial contrast echocardiography and scintigraphic technique, and the results are not consistent4,6.

Another possible mechanism is catecholamine-induced myocardial toxicity. A recent report showed that plasma catecholamines and neuropeptide Y levels were significantly higher in patients with Takotsubo cardiomyopathy than in those with acute myocardial infarction. Similar transient left ventricular dysfunction was reported in patients with pheochromocytoma8,9 and subarachnoid hemorrhage, supporting pathogenetic role of catecholamines in stress-induced cardiomyopathy or takotsubo cardiomyopathy. Anesth Analg 2006; 103: 583 – 586.

As Dr Kounis pointed out, it is possible to hypothesize that inflammatory mediators are playing some role in the pathogenesis of Takotsubo cardiomyopathy or modifying its clinical course. The next step would be to conduct both clinical and experimental studies to verify this hypothesis. So far, pathological studies of this syndrome have not shown significant inflammatory cell infiltration in either endomyocardial biopsy specimens or in an autopsy study5,9,11. At this moment, we are still far away from an exact understanding of this interesting syndrome.

References


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