Diagnostic role of head-up tilt test in patients with cough syncope

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Background: Coughing is a rare cause of syncope. The aim of this study was to describe the head-up tilt-test (HUT) and carotid sinus massage (CSM) responses, and the occurrence of syncope with coughing during HUT in a large cohort of patients.

Methods and Results: A total of 5133 HUT were retrospectively analysed to identify patients with cough syncope. HUT followed by CSM were performed. Patients were made to cough on 2 separate occasions in an attempt to reproduce typical clinical symptoms on HUT. Patients with cough syncope were compared to 29 age-matched control patients with syncope unrelated to coughing. A total of 29 patients (26 Male, age 49±14 years) with cough syncope were identified. Coughing during HUT reproduced typical prodromal symptoms of syncope in 16 (55%) patients and complete loss of consciousness in 2 (7%) patients, with a mean systolic BP reduction of 45±26 mmHg, and a mean increase in heart rate of 13±8bpm. No syncope or symptoms after coughing were observed in the control group. The HUT result was positive in 13 (48%) patients with the majority of positive HUT responses being vasodepressor (67% of positive HUT). CSM was performed in 18 patients and was positive for a vasodepressor response causing mild presyncopal symptoms in only 1 patient.

Conclusions: Syncope during coughing is a result of vasodilatation, rather than bradycardia. Coughing during HUT is a useful test in patients suspected to have cough syncope but in whom the history is not conclusive.