



Hemodynamic changes of unexplained syncope patients in head-up tilt test

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ABSTRACT. The purpose of this study was to observe the hemodynamic changes of unexplained syncope patients in the head-up tilt test and their correlations with age and gender. Eighty-six patients with unexplained syncope were administered the basic head-up test and nitroglycerin provocation test with continuous monitoring and recording of electrocardiogram and blood pressure changes. Basic characteristics of the patients and their hemodynamic responses throughout the tests were analyzed. All 86 patients tolerated and completed the head-up test. Forty-nine (56.98%) of the patients displayed a positive reaction, 37 (43.02%) patients displayed a negative reaction. Patients were divided into groups as follows: Group A, age ≤ 35 years; Group B, age 36-45 years; and Group C, age ≥ 46 years. Older patients were more prone to chronotropic incompetence, and younger patients were more prone to an excessive increase in heart rate. Older age correlated with the occurrence of autonomic nerve reaction disorder and mixed vasovagal syncope, whereas younger age was related to the occurrence of vasodepressor type vasovagal syncope ($P < 0.01$). Gender did not

significantly correlate with negative or positive head-up test results ($P = 0.184$). During the head-up test, younger patients mainly manifested an excessive heart rate increase, whereas older patients did not have significant heart rate changes. Analyzing the hemodynamic changes in the head-up test and studying the relationships between age, gender, and hemodynamic responses are crucial to determine etiologies of syncope and select appropriate treatment.

Key words: Vasovagal syncope; Tilt test; Hemodynamic change