

Comparison of two different head-up tilt test protocols to evaluate vasovagal syncope in children

Kayabey O., Canturk A. , Altun G. , Deveci M. , Cabbarov N. , Babaoglu K.
Department of Pediatric Cardiology, Faculty of Medicine, Kocaeli University, Kocaeli, Turkey

Introduction: Vasovagal syncope, is a common clinical problem in childhood which has higher incidence in adolescents. Head-up tilt test (HUTT) is the gold standard test in patients without organic heart disease. Different tilt test protocols are used for the evaluation of patients with syncope. In this study we aimed to compare the results of Westminster and Italian HUTT protocols. The passive phase of Italian protocol is 20 minutes which is 45 minutes in Westminster protocol.

Methods: 293 patients aging 6-18 years with a history of recurrent syncopes were involved in our study. Physical examination, laboratory parameters and echocardiographic examination were normal in all patients who were divided into two groups according to HUTT protocol. Westminster protocol (Group 1) and Italian tilt test protocol (Group 2) were performed in 150 and 143 patients respectively, the results were evaluated comparatively. Nitroglycerin was used sublingually in the active phase of HUTT protocols. Moreover, the results were analyzed according to different protocols and age. Statistical analysis was evaluated by using the T-Student's test, Chi-square test and Mann-Whitney U test.

Results: There was no significant difference between two groups by means of age, sex, age at first syncope and duration between first syncope and tilt test ($p > 0.005$). In Westminster protocol, HUTTs were 67%, 33% and 64.7% positive in passive phase, active phase and total respectively. These ratios were 46.3%, 53.7% and 56.6% in the Italian protocol respectively. There was not any significant difference between two protocols by means of positivity of the tests ($p = 0.160$). We found a significant difference in Westminster protocol in passive phase according to positivity of HUTT ($p = 0.002$). The type of syncope during the HUTT was shown in the table.

Table	Negative (n,%)	Cardioinhibitor (n,%)	Vasodepressor(n,%)	Mixt (n,%)
Group 1	53(35.3%)	15(10%)	34(22.7%)	48(32%)
Group 2	63(44.1%)	17(11.9%)	20(14%)	43(30.1%)

Conclusion: We think that Italian protocol has the advantage of time-saving. Thus, it seems to be more preferable than Westminster protocol. However, it should be considered that the positivity of HUTT in passive phase is higher in Westminster protocol.