Influence Of The Syncope Episodes On Neurocognitive Function In Patients With Vasovagal Syncope


Jagiellonian University Medical College, John Paul II Hospital, Syncope Unit, Department of Coronary Disease and Heart Failure, Institute of Cardiology, Cracow, Poland; Children Cardiology Department, Children University Hospital, Jagiellonian University Medical College, Cracow, Poland

Abstract

Syncope is an effect of temporal, global hypoperfusion of brain. It is known that even short episodes of circulatory arrest may lead to brain injury. Syncope related repeat hypoperfusion of brain may lead to some impairment of neurocognitive functions in patients with vasovagal syncope (VVS).

Aim of study: evaluation of influence of syncope on the neurocognitive functions (NCF) in pts. With suspected VVS.

Study population: 185 pts. (131 women) aged 17-70yrs (mean age 40 years), with suspected VVS, referred to HUTT.

Methods: All pts. underwent initial evaluation regarding to the number and circumstances of the syncopal and/or presyncopal spells. All pts performed HUTT with Westminster protocol. Basing on the syncope history and HUTT results two groups of pts were recruited: Gr.I - 95 pts with at least 2 syncopal spells and positive HUTT, and gr.II 42 pts with only presyncopal status without complete loss of consciousness and negative HUTT. Pts with only presyncope and positive HUTT were excluded.

All pts underwent the evaluation of NCF with computer-assisted Vienna Test System battery produced by Schuhfried (Austria). This battery consisted of the following tests:

DAUF- evaluation of long-term selective attention and concentration; COG- assessment of attention and concentration; STROOP- registration of the color-word interference tendency, CORSI – estimation of visual short-term memory capacity and implicit visuo-spatial learning. Values of the measured parameters were compared between both groups of pts.

Results: Patients without syncope (gr.II) had higher number of correctly reproduced sequences (11.0 vs 8.38 p<0.01) and Reliable Spatial Span score (5.50 vs 4.46, p<0.01) in CORSI test, in relation to pts with syncope (gr. II). This suggests possible influence of the syncope episode on the short-term memory capacity in pts with VVS. There were no significant differences between groups comparing results of the other tests.

Conclusions: Repeated syncope episodes may lead to impairment of short-term memory capacity in patients with vasovagal syndrome. Syncope has negative influence on neurocognitive functions in patients with vasovagal syndrome.
Brain Desaturation During Head-Up Tilt Test In Teenagers With Vasovagal Syncope


1Children Cardiology Department, Children University Hospital, Jagiellonian University Medical College, Cracow, Poland
2Syncope Unit, Department of Coronary Disease and Heart Failure, Institute of Cardiology, Jagiellonian University Medical College, John Paul II Hospital, Cracow, Poland

Abstract

Introduction: Brain hypoperfusion causing the syncope may lead to changes in the brain tissue. Is there some differences between teenagers response to the brain hypoperfusion in relation to older group of patients with syncope.

The aim of study: analysis of changes of cerebral regional oxygen saturation (rSO2) measured by near infra-red spectroscopy (NIRS) during head-up tilt test (HUTT) in young patients with vasovagal syncope (VVS).

Methods: Study population: 175 young pts. (123 girls) aged 12-18yrs (Group I) and 385 adult patients (266 women) – Group II - with VVS referred to HUTT.

Methods: All pts underwent HUTT according standard Westminster protocol. During HUTT rSO2 of frontal lobes of brain was measured using INVOS cerebral oximeter in all pts. Baseline value of rSO2 was evaluated during 15 min. supine phase before HUTT. Changes of rSO2 during HUTT was expressed as a relative decrease (in%) of rSO2 in left and right channels. Area limited by curve of rSO2 and baseline level of rSO2 during HUTT (rSO2-AUC), mean (rSO2-mean) and maximal (rSO2-max) desaturation during the test was also analyzed in all patients.

Results: HUTT was positive in 152 pts. from group I (86,8%) and 309 pts. from group II (80,2%). Significant desaturation preceded syncope induction during HUTT in all pts in comparison to pts with negative test (-29.9 and -32.1 % vs -11,5 and -12,3 % p< 0,00001). Higher values of mean desaturation and area limited by the desaturation curves were observed in teenagers in comparison to adult pts. with vasovagal syncope induced by HUTT. (rSO2-mean L 7,9% vs 5,6%; rSO2-mean R 7,8% vs 5,5%, p<0,02; rSO2-AUC 189,2 vs 152,6 %min; 207,3 vs 151,1%min, p<0,015). There were no significant differences of maximal desaturation between both groups.

Conclusions: 1. Higher cerebral desaturations were observed during syncope induced by Head-Up Tilt Test in teenagers than in adult people.

2. Higher brain desaturations caused by hypoperfusion leading to reflex syncope in young patients might be a potential injuring factor for the nervous tissue in this group of patients.
Abstract

Introduction: through a retrospective study concerning the experience of our center in patients affected by Neurally Mediated reflex Syncope (NMS), we wanted to verify not only the diagnostic yield of ILR but its possible placebo therapeutic effect.

Methods: in the context of patients affected by a severe clinical presentation of NMS, identified through a careful clinical evaluation, we selected those who followed a diagnostic iter using the ILR.

Results: we analysed 84 patients (39 male and 45 female, mean age 71 years), during the period 2009-2013. 34 patients (40.5%) had not recurrences after a mean follow-up (FU) of 35 months, among these 17 patients concluded a FU of 4 years. 50 patients (59.5%) had recurrences and a specific diagnosis after an average period of 7 months

Conclusions: we found an important number of patients who show a disappearance of syncope during an observation period of 2-3 and 4 years. At first glance this result could be explained considering the possible placebo therapeutic effect of ILR.