Abstract

Background: The aim of the study was to evaluate the clinical signs and symptoms in the differential diagnosis of syncope.

Methods: We investigated 160 patients (64 men and 96 women), aged 18-77 years with reflex or cardiac syncope over the last 3 years. The following were investigated: age, sex, age at first syncope, number of presyncopal episodes, number of syncopal episodes, number of sudden syncope without prodromal signs and the circumstances of syncope (in standing, sitting or lying position, during walking, in crowded and warm places) (Table 1). Moreover, we assessed the frequencies of prodromal signs (general weakness, dyspnea, heart palpitations, cold sweats, feeling of cold or heat, visual disturbances, tinnitus, headache, stomachache, nausea) in the differential diagnosis of syncope (Table 2).

Results: Patients with reflex syncope were younger compared to patients with cardiac syncope (41.3±16.5 vs. 61.8±12.8; P<0.001) and had lower weight and body mass index (BMI). Reflex syncope patients more often presented with presyncope (16.8±21.3 vs. 3.2±4.4; P<0.001) and syncope (8.1±7.8 vs. 5.4±1.6; P<0.001). Dyspnea, heart palpitations, feeling of cold or heat, visual disturbances and tinnitus were associated with reflex syncope (P<0.01).

Conclusions: The course of syncope may facilitate a diagnostic process of reflex and cardiac syncope.
Abstract

Introduction: The diagnostic role of ajmaline challenge in patients with unexplained syncope and a negative workup, including normal basal ECG, is unclear.

Methods: Patients with unexplained syncope and a negative workup were enrolled. Conduction disturbances on ECG were not considered as an exclusion criteria. EPS was performed and basal HV interval was measured. In the presence of a HV interval >70 msec the study was interrupted and a PM was implanted. If HV interval was ≤ 70 msec, ajmaline (1 mg/Kg over 2’) was infused. A prolongation ≥100 msec was considered as diagnostic, and patients were implanted with a PM, otherwise an ILR was positioned.

Results: Sixteen patients were enrolled since September 2014 to March 2015 (figure 1). Seven had normal ECG. Of them, none had a basal HV >70 msec. Three patients had pathological response after ajmaline challenge.

Conclusions: Ajmaline challenge is a useful tool to unmask the presence of a conduction disease in patients with unexplained syncope and negative workup, even in patients without conduction disturbances on basal ECG. Larger population is required to validate this hypothesis.
Changes Of Nitric Oxide Serum Concentration During Head-Up Tilt Test In Patients With Vasovagal Syncope


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Abstract

Introduction: Pronounced vasodilatation during vasovagal syncope indicate the role of endothelium in its patomechanis. The endothelial release of nitric oxide is seems to be an important factor in the vasovagal syncope.

The aim of study was evaluation of Nitric Oxide (NO) serum changes during head-up tilt-test in patients with vasovagal syncope (VVS).

Study population: 25pts (11 men, 14 women) aged 18-42 years (median of age: 21yrs) with VVS referred to HUTT. Cardio- and neurological causes of syncope were previously excluded in all studied pts.

Methods: In all pts HUTT according Westminetr protocol was done with sublingual nitroglycerine (NTG) provocation, in the case of negative result of passive tilting.

During HUTT continuous, noninvasive beat-to-beat monitoring of heart rate and blood pressure were performed using NEXFIN (Bmye) monitor. Before the test, after completion of both – passive and active phases (after NTG provocation) and 15 minutes after finishing the test (syncope induction or protocol completion) the blood samples were taken, to evaluation of serum concentration of NO2- and NO3-. Serum concentration of NO was evaluated as the difference before concentration of NO2- and NO3-. Changes of NO serum concentrations during HUTT were analysed in relation to the type of vasovagal response during the test.

Results: HUTT was positive in 21 pts (84%) – in 5 pts there were cardioinhibitory response, in 14 pts. – mixed and in 2 - vasodepressive. Serum NO concentration before the test in pts with negative HUTT was significantly lower in relation to pts with positive HUTT (12.2 vs 22.6 μM). After completion of passive phase of HUTT significant decline of NO concentration was noticed in HUTT-negative pts (9.7 vs 12.1 μM), whereas pts with positive HUTT revealed non-significant trend to decrease, (20.7 vs 22.6 μM). After sublingual NTG administration, increase of NO concentration was observed in both, HUTT negative and HUTT positive pts. (HUTT- : 14.2 vs 9.7 p < 0.01; HUTT + : 25.3 vs 20.7 μM p<0,05). After the test, NO concentration decreased below the value observed prior to HUTT. There were no relation between serum NO concentration and type of vasovagal response to the orthostatic stress.

Conclusions:
1. Serum nitric oxide concentration decreased during the passive phase of HUTT, next significantly increased after NTG provocation and finally decreased below initial values. This changes were much more pronounced in patients with negative result of the HUTT
2. Syncope induction during HUTT was related to significantly higher values of serum nitric oxide concentration in relation to the HUTT-negative patients.
3. Changes of nitric oxide concentrations seems to important role in the pathomechanism of vasovagal response to orthostatic stress in patients with vasovagal syncope.
Hemodynamic Monitoring By The Method Of Electrical Velocimetry During Head Up Tilt Testing

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Abstract

Introduction: continuous noninvasive hemodynamic monitoring by the method of electrical velocimetry (EV) is used mainly in intensive care setting for beat to beat monitoring of the cardiac output (CO) and systemic vascular resistance (SVR).

Methods: to asses the usefulness of the beat to beat noninvasive recording of CO, SVR and heart rate using 4 standard ECG electrodes and intermittent manual blood pressure measurements during head up tilt testing (HUTT) in syncope patients.

Results: 212 patients referred for syncope evaluation underwent HUTT with nitroglycerine challenge using non-invasive monitoring by EV method. HUTT was positive in 157 (74%).

Positive responses were predicted by progressive decrease in SVR (dyne/cm5/m2) at symptom onset comparing with baseline: 2175±321 vs. 2090±431 (p=NS) and 1178±215 vs. 1701±382 in patients with negative response (p<0.1). Concomitant changes in CO and SV but blood pressure (BP) recording was available at a mean interval of 42±12 seconds.

Conclusions: the EV hemodynamic monitoring method can be used during HUTT but limitations on continuous BP measurement and carotid massage have to be considered.
Abstract

Aim: to test the Implantable Loop Recorder (ILR) in syncopal and non-syncopal transient loss of consciousness (TLoC) and in detecting atrial fibrillation (AF) in cryptogenic stroke.

Methods: 182 patients were implanted between January 2003 and May 2014. 81 (45%) syncope; 3 (1.6%) pseudo-syncope; 32 (18%) epileptics; 35 (19.2%) unexplained falls; 6 (3.3%) patients with syncope/fall; 5 (2.7%) suspected AF; 20 (11%) cryptogenic stroke.

Results: the mean age was 70±14.2 years. After a follow-up of 19±16 months, 109 patients (59.9%) relapsed. Asystole was detected in 51.9% of the syncope, in 100% of the epileptics, in 53.9% of the fallers, in 20% of the syncope/fall and in 33.3% of the strokes. AF was confirmed in 80% of the suspected cases, in 66.7% of the strokes, in 40% of those with syncope and falls. Diagnosis was made in 70.4% of the syncope, in 59.4% of the epileptics, in 74.3% of the fallers, in 100% of the syncope/falls, in 66.7% of the pseudo-syncope, in 50% of the strokes and in the 100% of the suspected AF. No arrhythmia was recorded in 64 patients, in 49 of these the monitoring is ongoing. Pacemaker was implanted in 22.2% of the syncpe, in 18.8% of the epileptics, in the 20% of the suspected AF. Oral anticoagulation was started in 60% of AF patients, in 20% of the strokes, in 16.7% of the syncope and falls.

Conclusions: ILR is useful in detecting arrhythmias both in high risk patients and in the TLoC diagnostic pathway.
Abstract

Introduction: Syncope or palpitations frequently present a diagnostic challenge. An implantable loop recorder (ILR) is an important aid in the management of these patients.

Methods: Retrospective study of 62 patients that underwent ILR implantation from November 2007 to 2014.

Results: Previously to ILR 88.7% of patients had performed Holter, 17.7% external events recorder, 33.9% Tilt test and 29% electrophysiological study. The implantation indications were: in 90.3% recurrent syncope, 8.1% palpitations and one for ischemic stroke. Mean follow-up time was 17.1±16.3 months. Symptoms were reported in 66.1% of the patients, from those in 46.8% were a diagnostic finding. In all cases of palpitation complaints was diagnosed atrial fibrillation (AF). From patients with syncope in 16.1% was demonstrated sinus node dysfunction, 19.6% atroventricular conduction disturbance, 1.8% AF and 7.1% paroxysmal supraventricular tachycardia. As therapeutic measures we found: 19 pacemakers, introduction of anticoagulation in 5 patients, a CRT-D and one ablation of an accessory pathway.

Conclusions: ILR proved to be a safe and efficient. It has enabled to identify serious rhythm disturbances in more than half of patients and provided a targeted therapeutic intervention.
Combined Role Of Tilt Table Test And Implantable Loop Recorder To Identify Patients Affected By Severe Clinical Presentation Of Neurally-Mediated Reflex Syncope Who Could Respond To Cardiac Pacing

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Abstract

Aim: To verify the diagnostic value of tilt table test (TTT) to predict the efficacy of cardiac pacing (PM) for preventing recurrences of neurally mediated reflex syncope (NMS) in patients with cardio-inhibitory activity (CI) documented by implantable loop recorder (ILR).

Methods: Among patients selected by ILR in the context of severe clinical presentation of NMS, we analysed those who underwent PM implantation. In this observational and retrospective study, we wanted to verify the results of TTT in the group of treated patients with and without recurrences.

Results: We analysed 24 patients treated using a PM (10 male and 14 female, mean age 70 years). During an average follow-up period of 35 months, the recurrence of syncope occurred in 7 patients (29%). 17 patients (71%) had no recurrences. TTT was negative in 15 patients out of 17 without recurrences (88%). Among the 7 patients with recurrences, TTT was positive in 4 patients (57%).

Conclusions: In this selected group of patients, a positive response to TTT is more likely correlated with a higher frequency of recurrences of syncope, while a negative response seems to predict the success of the pacing therapy. Consequently, PM could be insufficient to prevent the recurrences in the group of patients with positive TTT.
Safety And Tolerability Of Tilt Testing And Carotid Sinus Massage In The Oldest Old

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Abstract

Aims: To evaluate safety and tolerability of Tilt Testing (TT) and Carotid Sinus Massage (CSM) in the oldest old (patients aged 80 and older) and in younger patients with unexplained syncope.

Methods: 1170 patients were enrolled: 549 were 80 or older and 621 were younger. TT and CSM were performed according to the European Society of Cardiology Guidelines. Complications were recorded in each group. An early interruption of TT was defined intolerance and considered as non-diagnostic.

Results: TT complications were observed in 5.3% of older patients and in 2.4% of the younger ones (p=0.01). Most of the complications (88.6%) were minor, as persistent hypotension. Orthostatic hypotension was a predictor of complications. No complications occurred after CSM. Intolerance was reported in 2.7% of older patients and 1.1% of the younger ones (p=0.04), mainly because of orthostatic intolerance.

Conclusions: TT complications were more common in older patients, probably due to a higher prevalence of orthostatic hypotension. No complications occurred during CSM and intolerance was very low in each group. TT and CSM are safe and well tolerated in the oldest old.