Abstract

Objectives: Evaluation of baroreceptors sensitivity in relation to presence of reflex syncope in young adults with benign forms of sinus node dysfunction (SND) in near-asymptomatic young adults after reparation of d-transposition of great arteries d-TGA by Senning atrial switch (SAS).

Study population: we observed 21 pts (14 men) aged 18-21 yrs with d-TGA, with electrocardiographic signs of SND and history of presyncope and 21 sex and age matched healthy volunteers.

Methods: All pts underwent head-up tilt test (HUTT) and transoesophageal atrial stimulation for evaluation of corrected sinus node recovery times (CNRT) before and after pharmacological blockade (PHB). CNRT>525 ms was assumed as abnormal. Non-invasive evaluation of baroreceptor sensitivity (BRS) during HUTT was evaluated in dTGA patients and healthy control group using NEXFIN analyser.

Results: HUTT was positive in 6 pts (28,6%), negative in 7 pts, and doubtful (presence of bradycardia and/or hipotonia with aggravated prodroms) in 8 pts.

Mean CNRT value was 698,2ms; SACT- 124,4ms and shorten significantly after PHB (CNRT to 362,8; SACT to 116,5ms). Mild prolongation of CNRT (<850 ms) with normalization after PHB was observed in 12 pts (57,1%).

Reduction of BRS was observed in dTGA pts. in comparison to healthy controls. Significant depletion of BRS was also observed in pts. with negative HUTT in relation to non-fainter, both in dTGA(systolic BP: 11,4 vs 16,9 ms/mmHg; diastolic BP 18,4 vs 21,1 mmHg;p<0,03) and control groups(systolic BP: 12,6 vs 19,4 ms/mmHg; diastolic BP 13,3 vs 16,6 mmHg;p<0,02).

Conclusions: 1. Reflex vasovagal syncope frequently occurs after physiological correction of d-TGA.

2. Electrocardiographic signs of sinus node dysfunction rather then abnormal electrophysiological parameters were noticed in near-asymptomatic young adults after reparation of d-transposition of great arteries by Senning atrial switch.

3. Significant reduction of baroreceptor sensitivity was observed after dTGA correction by atrial switch both in pts. with positive and negative HUTT.
Evaluation of the Behavior of the QRS Interval from the Beginning of the Carotid Pulse Wave During a Tilt Test in 100 Patients with a History of Syncope and a Control Group of 30 Asymptomatic Volunteers

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Abstract

Introduction: Syncope (S) is a common manifestation, being the vasovagal (VV) the most common cause. The diagnosis is based on interrogation and reproducibility of S in the tilt test (TT), but it has high incidence of false negatives and time consuming. Since 2008 we have evaluated the utility of measuring the delay of the pulse wave carotid from QRS onset during TT to early predict the outcome in patients (p) with a history of S VV with encouraging results.

Objectives: To analyze the novel parameter for TT in P with S of probable VV compared with a control group without S. Methodology: Prospective observational study in 100 consecutive p S of probable VV and 30 volunteers without S, which was performed by recording conventional TT FC, SBP, DBP and the non-invasive wave of carotid pulse with pressure transducer in multichannel polygraph, measuring the interval from the onset of QRS to the carotid pulse wave by digital caliper accuracy +/- 2 mseg to 100 mm / sec, from baseline to the end of the study (s or 45'). Capacity was evaluated under 17 sec delay of the pulse wave to predict the outcome of the TT in the first 5 minutes of tilt. Statistically the baseline characteristics of the p of the three groups was compared using Fisher’s exact test. To assess predictors of outcome TT univariate models were created and the variables with p less than 0.05 were entered into multivariate model. After verifying the independent association between the delay of the carotid pulse wave and the result of the TT, we constructed COR curves to evaluate the discriminative ability of the parameter and detect threshold value better sensitivity and specificity. The discriminative ability was assessed with the C statistic confidence interval of 95%. Result:There were not any significant differences between the characteristics of the groups with positive or negative TT, or the control group. The only statistically significant parameter associated with the result of the TT was the delay of the carotid pulse wave (greater than 17 mseg) within five minutes of the inclination.

Conclusions: The delay in the pulse wave identified 78% of the S p with history and positive TT and S 2 in the control group developed.
Abstract

Introduction: Syncope in older persons is common. A standardized approach can achieve a diagnosis in up 70% of patients. Current guidelines advise an echocardiogram (echo) is a helpful screening test if the history, physical examination, and ECG do not provide a diagnosis. However, there is minimal data on the diagnostic yield of echo in elderly patients. The purpose of this study is to assess whether echo adds diagnostic utility in older patients with syncope.

Methods: Prospective study of patients attending a syncope clinic over a 12 month period in 2010. Inclusion criteria were age >65 years and ≥ 1 syncope in the previous 12 months. If clinical assessment, including ECG, was not diagnostic patients underwent transthoracic echo.

Results: Sixty-one patients were included. The mean age was 78 (± SD 6.28) years and 32 (53%) were female. A diagnosis was achieved in 45 (74%) patients on clinical assessment. Echo was not diagnostic in the 16 patients with unexplained syncope.

Conclusion: Echo in addition to clinical assessment did not increase the diagnostic yield in older patients with unexplained syncope.
Abstract

Introduction: POTS is defined by orthostatic intolerance with abnormal increase in heart rate (>30 beats or >120 beats/min within 10 min). We assessed the incidence in patients allocated to head-up tilt table test (HUTT), evaluated therapy and treatment response.

Methods: HUTT was performed in 120 patients from 2010 to 2012 (Task Force Monitor, 60-degree upright tilt for 30 minutes). Follow-up was done by phone or during ambulatory treatment.

Results: POTS was diagnosed in 19/120 patients (16%), more often in women (11:8). 3 patients suffered from orthostatic hypotension (OH), in 5 patients a (pre)syncope occurred.

Therapy included increased dietary fluids, stockings, salt, counter maneuvers, active standing and moderate exercise. 3 Patients received beta blocker, 1 patient midodrine, a loop recorder was implanted in 1 patient, a pacemaker in 2 patients.

Follow-up (mean 53 weeks) was performed in 18/19 patients. 60/81 of the recommended therapies were adopted by patients (74%), syncopes were reduced from 7.4 to 2.5/patient (- 67%).

Conclusion: The prevalence of POTS was 16%. Compliance was good, syncopes were reduced by diagnosis, education and therapy. Non medical therapies are indicated as first line therapy.

Figure : POTS without syncope

Figure : POTS with syncope
Abstract

Introduction: Female hormones have well known influence on the cardiovascular system. They participate in the regulation of vascular resistance, sensitivity of adrenergic receptors, plasma volume, skin blood flow and others. In the perimenopausal period estrogen and progesterone levels begin to fall. The aim of this study was to evaluate if this changes modify the clinical pattern of vasovagal syncope.

Methods: The study has enrolled 500 consecutive women, with the history of syncope of probably vasovagal etiology. On the basis of the medical history age of first syncope, number of syncope and comorbidity have been analyzed. All women underwent the tilt test according to the recommendation of the ESC. Then we examined whether there were some differences in the frequency of positive or negative results of HUTT or the type of VVS for the comparison groups.

Results: Age at first syncope was higher in postmenopausal women. There were no significant differences in the incidence of syncope and presyncope episodes regarding medical history. In postmenopausal women comorbidities were more often. The difference of the incidence of positive and negative HUTT's results between comparison groups didn’t have statistical significance. The occurrence of the vasodepressive response was significantly more frequent in postmenopausal women.

Conclusions: This observation may be related to the postulated different mechanism of the vasovagal syncope in patients over fifty, which is used to be called a vasovagal disease and is related to the changes in autonomic nervous system.
Abstract

Introduction: We evaluated the importance of multiple tests performed on patients (p) who entered a syncope unit (SU).

Methods: From September 2004 to November 2011, 377 p. were admitted to the SU. Male (57.8%). Average age (67.2 ± 18.5 years).

Following our diagnostic algorithm previously published, patients were risk stratified into three groups: low risk (LR), intermediate risk (IR) or high risk (HR). LR patients were discharged home. IR patients had eventually echocardiogram (Echo), upright tilt test (TT), stress-echo (S-Echo) and Holter monitoring.

Result: The cause of syncope was established in 93% of the patients (definitive diagnosis 41%, presumptive diagnosis 52%). Neurally mediated (NM) in 56% and arrhythmic (A) in 25.8%. In the HR group the most frequent cause was A (56.3%). In IR group NM was more prevalent (64.4%). The rate of recurrent syncope was 29.7%.

Conclusions: A SU streamlines the diagnostic approach to syncope, enhancing diagnostic yield and potentially reducing unnecessary testing and admissions.
Role of Mobile Telemedicine in Patients with Different Types of Arrhythmia and Syncope

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Abstract

Introduction: The goal of the present study was to assess different types of arrhythmia and syncope with the help of mobile telemonitoring, which is an uncomplicated technology that facilitates the continuous monitoring and recording of arrhythmias.

Methods: We investigated 54 outpatients in Georgia (Republic of) with different types of arrhythmia (n=32 male and n=22 female). Investigations were made by 3-lead electrocardiograph-ECG loop recorder in automatic recording/transmitting mode.

Results: Arrhythmias were registered during 7-68 hours of observation. Arrhythmia relapse was detected in 35% of patients who underwent radiofrequency catheter ablation, mostly they were asymptomatic. Asymptomatic episodes of ventricular premature complexes were detected in patients who underwent aorto-coronary bypass graft surgery. From n=10 patients with epilepsy we discovered n=3 patients with supraventricular tachycardia (SVT) and n=2 patients with sinus tachycardia. Among patients with unexplained syncope, we revealed patients with sinus tachycardia, with SVT and patient with sick-sinus syndrome. Asymptomatic episodes were detected in majority cases p=0.001 (52%).

Conclusions: Mobile telecardiology is also a useful tool to detect a relapse or symptomatic and asymptomatic episodes of life-threatening arrhythmia and syncope.
Abstract

Introduction: Vasovagal syncope is considered as the most common factor in etiology of neurocardiogenic syncope. Numerous conditions could be responsible for this feature. The management of syncope is often successful with the presence of a proved triggering factor.

Case report: A sand bag compression was applied for bleeding control on the sheath applied on the femoral artery in case of angiographic stent intervention with the history of acute myocardial infarction. During the process, we encountered a sudden onset of hypotension and bradycardia, and consequent transient unconsciousness and asystole though no previous vital signs exist. After administering atropine of 1 mg intravenous bolus for treating bradycardia and stopping sand bag compression, a fast recovery was observed. We supposed that the sand bag compression at the point of intervention raised pain. We concluded that a painful stimulus caused by sand bag compression might be considered as triggering factor for vasovagal syncope in such a patient not carrying any preexisting arrhythmia and abnormal vital sign.