A13. TILT TESTING IN VASO-VAGAL SYCONE: NEW ASPECTS

I. Lovinska, L. Chalupová, E. Varga, K. Barta, Z. Szabo, L. Csiba
First Department of Medicine and First Department of Neurology, Medical & Health Science Centre, University of Debrecen, Debrecen, Hungary

Objectives: Vaso-vagal syncope (VVS) is a common and complex clinical disorder, but the underlying pathophysiological mechanisms have not completely been demonstrated. Although recent research has clarified some of the pathophysiological mechanisms involved, it still remains unknown or incompletely understood. The cerebrovascular changes that occur prior to and during syncope are unclear, with both increases and decreases in cerebrovascular resistance being reported during VVS.

Aim: Transcranial Doppler sonography was used to assess time relation and characterized changes in middle cerebral artery blood flow velocity and pulsatility index before and during syncope provoked by head up tilt test (HUVT) in patient with VVS.

Patients and Methods: We performed tilt table tests in 18 patients (age=42±13 vs. 26±8 female/male) with a medical history for syncope after exposure to syncope. Examination was done 45 minutes drug free HUVT in a 60 degrees postural position under monitoring of heart rate by transcranial Doppler with 2-MHz probe (DWM Multi-Dop X4).

Results: In patients with VVS syncope occurred after 5 to 45 minutes (average 23.3). During HUVT 3 had cardioinhibitory (CI), 9 vasodepressor (VD) and 6 with mixed (MX) type of VVS. The mean systolic blood pressure decreased from the initial value of 140-19 to 70-12 mmHg during syncope. In parallel to the blood pressure, the mean flow velocity decreased from 70±16 to 27±12 cm/sec, while the pulsatility index increased from 0.81±0.10 to 3.30±1.87. Significant increase of the pulsatility index has already been observed one minute before syncope to 0.96±0.24 (p<0.05, compared to the initial value).

Conclusions: Patients with VVS have blood flow velocity changes of middle cerebral artery one minute before losing consciousness. Increased pulsatility index could be caused by increased sympathetic tone, hypocapnia due to hyperventilation or collapse of artery wall because of hypotension. Transcranial Doppler is a useful examination during HUVT, to investigate changes of cerebral perfusion during syncope.

A13.1 CHANGES OF CEREBRAL BLOOD FLOW DURING TILT TABLE TEST IN PATIENTS WITH VASO-VAGAL SYCONE

I. Lovinska, L. Chalupová, E. Varga, K. Barta, Z. Szabo, L. Csiba
First Department of Medicine and First Department of Neurology, Medical & Health Science Centre, University of Debrecen, Debrecen, Hungary

Objectives: Vaso-vagal syncope (VVS) is a common and complex clinical disorder, but the underlying pathophysiological mechanisms have not completely been demonstrated. Although recent research has clarified some of the pathophysiological mechanisms involved, it still remains unknown or incompletely understood. The cerebrovascular changes that occur prior to and during syncope are unclear, with both increases and decreases in cerebrovascular resistance being reported during VVS.

Aim: Transcranial Doppler sonography was used to assess time relation and characterized changes in middle cerebral artery blood flow velocity and pulsatility index before and during syncope provoked by head up tilt test (HUVT) in patient with VVS.

Patients and Methods: We performed tilt table tests in 18 patients (age=42±13 vs. 26±8 female/male) with a medical history for syncope after exposure to syncope. Examination was done 45 minutes drug free HUVT in a 60 degrees postural position under monitoring of heart rate by transcranial Doppler with 2-MHz probe (DWM Multi-Dop X4).

Results: In patients with VVS syncope occurred after 5 to 45 minutes (average 23.3). During HUVT 3 had cardioinhibitory (CI), 9 vasodepressor (VD) and 6 with mixed (MX) type of VVS. The mean systolic blood pressure decreased from the initial value of 140-19 to 70-12 mmHg during syncope. In parallel to the blood pressure, the mean flow velocity decreased from 70±16 to 27±12 cm/sec, while the pulsatility index increased from 0.81±0.10 to 3.30±1.87. Significant increase of the pulsatility index has already been observed one minute before syncope to 0.96±0.24 (p<0.05, compared to the initial value).

Conclusions: Patients with VVS have blood flow velocity changes of middle cerebral artery one minute before losing consciousness. Increased pulsatility index could be caused by increased sympathetic tone, hypocapnia due to hyperventilation or collapse of artery wall because of hypotension. Transcranial Doppler is a useful examination during HUVT, to investigate changes of cerebral perfusion during syncope.