

(P13) Left atrial enlargement and failure of diastolic function in non-hypertensive young stroke patients

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Purpose: In young stroke patients, aetiology is often cryptogenic. Our purpose to study cardiac function in young stroke patients by trans-thoracic echocardiography (TTE).

Methods: TTE examinations were performed in 50 patients (31 males, 19 women; 34 +/- 10 yrs) and 50 age-sex matched controls. Ejection Fraction (EF), chamber volumes were measured. Diastolic function, left atrial dimension (LAD) was evaluated by four chambers echographic window in order to better define mitral valve plane. Transmitral filling velocities (E and A); pulmonary venous atrial reversal duration; lateral and septal early diastolic mitral annular velocities; E/lateral early diastolic mitral annular velocity; E/septal early diastolic mitral annular velocity were assessed. Subjects presenting mitral valve calcinosis, mitral valve prolapses and hypertensive were excluded by the investigation.

Results: In Stroke-Patients as well as in control group, Left Ventricular Ejection Fraction showed normal parameters according with the age of patients. No distinctions between sexes were found. Left atrial enlargement (LAE) and impairment of Diastolic Function (DF) were a frequent result in Patients (18/50: 36 %) but not in control group (7/50: 14 %). Stroke aetiology did not influence DF parameters behaviour. Stroke-Patients showed an Odd Ratio of 2.57 for blunted diastolic function and LAE in comparison to controls.

Conclusions: Cardiac ultrasound evaluation is routinely performed in stroke patients. According to the young age of enrolled patients, failure of systolic function was not found. Conversely, involvement of different cardiac haemodynamic mechanisms must be considered to explain undetermined stroke aetiologies. Further studies are necessary to confirm haemodynamic hypothesis.

POSTER SESSION II

(P14) Changes in fibrinolytic system in healthy volunteers after a 1-hour continuous Doppler monitoring using a diagnostic 1-4 Mhz Transcranial probe

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Background: Since the 1970s, in vitro and animal models studies demonstrated an acceleration of thrombus dissolution when using an ultrasound beam. The aim was to monitor the changes of haemocoagulation parameters in healthy volunteers after a 1-hour continuous Doppler monitoring (sono-thrombolysis, CDM) using a diagnostic 1-4 MHz duplex transcranial probe.

Methods: 30 healthy volunteers (15 males, aged 50-70, mean 56.1±4.5 years) underwent a 1-hour CDM of the middle cerebral artery (MCA). Two weeks later, they underwent a CDM of the radial artery (RA) and, 4 weeks thereafter, a standard neurosonological examination (NSE). Plasma levels of tissue plasminogen activator (tPA), α-2-antiplasmin (AP), plasminogen (PG) and plasminogen activator inhibitor-1 (PAI-1) were examined before, 1 hour and 24 hours after a beginning of CDM or NSE. Student's t-test and Wilcoxon signed ranks test were used for statistical evaluation.

Results: After a CDM of the MCA, PAI-1 antigen, AP and PG activity decreased by a mean of 26.6%, 5.1% and 4.3% respectively and tPA antigen increased by mean 7.1% (p < 0.05 in all cases) with normalization during 24 hours. After a CDM of the RA, PAI-1 antigen, AP and PG activity decreased by a mean of 16.8%, 3.3% and 6.7% respectively (p < 0.05 in all cases). Standard NSE did not affect any of the measured factors. No changes on MRI were detected.

Conclusion: Continuous Doppler monitoring using a diagnostic 1-4 MHz duplex transcranial probe may affect the fibrinolytic system in humans.

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(P15) Paradoxical Brain embolism from pulmonary fistulae the role of TCD

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Background: Paradoxical embolism through right-to-left shunt may be responsible for a number of cryptogenic strokes. Several abnormalities such as Inter-Auricular Communication, Patent Foramen Ovale (PFO) and Pulmonary Fistulae may be identified if clinical suspicion leads to specific examinations.

Case Description: We present a case of a 44 year old apparently healthy woman without known risk factors for stroke who experienced a sudden onset of visual field