

atherosclerosis or cardioembolic stroke. MES were not associated with short-term functional outcome, long-term mortality or future vascular events.

**Conclusions:** MES is moderately frequent following acute ischemic stroke. MES monitoring helps to better classify stroke type. MES does not have any prognostic significance.

### **Embolic lesions due to patent foramen ovale in young subjects are frequently distributed in vertebrobasilar circulation**

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Background and purpose: Patent foramen ovale (PFO) is a well-known risk factor for ischemic stroke in young persons. The aim of our study was to verify if there is a typical lesion pattern in juvenile stroke due to PFO.

**Methods:** From 1085 patients consecutively admitted to our stroke unit for their first ischemic stroke or TIA from January 1995 to December 2007 we evaluated 152 patients with an age of less than 55. We used transcranial Doppler to diagnose right-to-left shunt due to PFO and MRI to evaluate presence and vascular territory distribution of ischemic lesions. We then considered only patients with ischemic stroke and definite lesions on MRI, thus 108 patients were included in further analysis to investigate the correlation between lesion pattern and presence of PFO.

**Results:** PFO was present in 40 out of 108 patients (37%). There were 77 (71.3%) patients with lesions only in anterior circulation, 25 (23.1%) patients with lesions only in posterior circulation and 6 (5.6%) patients with lesions in both anterior and posterior circulation. Subjects with PFO had more frequently isolated ischemic lesions in posterior circulation as opposed to patients without PFO (14 out of 40 - 35% vs. 11 out of 68 - 16.2%;  $p < 0.05$ ).

**Conclusions:** patients younger than 55 years of age with ischemic stroke due to PFO have more frequently isolated posterior circulation infarctions compared with patients presenting stroke due to other causes.

### **Ultrasound evaluation hemicraniectomized Traumatic Brain Injury (TBI) patients: a perfusional approach and venous hemodynamic monitoring**

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In order to improve the management of patients with moderate to severe TBI and contusive-hemorrhagic brain lesions, undergoing to hemicraniectomy in order to relief intracranial hypertension, a bedside monitoring technique could be useful. TCCS is a neurosonological technique that can visualize both parenchyma features and vessel condition. In the follow-up of these patients the perfusion data on affected brain tissue can be useful for predicting the prognosis, according to the current literature. TCCS is able to show both this information, by UCA administration and a specific perfusion protocol, and the bedside serial study of venous hemodynamics.

We studied with TCCS five young patients with an contusive-hemorrhagic brain damage in a supratentorial site, who underwent to hemicraniectomy because of rapid consciousness deterioration due to intracranial hypertension. TCCS was used both for large vessel examination and for microcirculation study by the application of a perfusion protocol with Power Modulation technique and UCA administration.

The main findings of venous system modifications are:

- Continuous high flow velocity in trasverse sinus contralaterally or bilaterally
- Lack of visualization of flow signal in the ipsilateral trasverse sinus
- High flow velocity in deep venous system
- Lack of compensation from deep venous system.

In our small series we can conclude that TCCS is a very reliable and useful tool for studying hemicraniectomized patients. The presence of deep venous system compensation is associated to good perfusion findings and a better outcome in the short time.

## SESSION VII

### **TCD-profiling to detect cerebral microangiopathy. Influence of blood pressure and carotid distensibility on profiles of the MCA.**

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**Background:** TCD-profiling is a new method to detect cerebral microangiopathy by the determination of increased cerebral resistance in TCD flow spectra of the main stem