**P099-e**

**Early rehabilitation after surgical treatment of ruptured intracranial aneurism: Motoric and functional results**

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**Introduction.**—Rupture of intracranial aneurism is responsible for 85% of subarachnoid haemorrhages (SAH).

**Goal.**—The goal of this study was to analyze the results of motor and functional recovery after postoperative early rehabilitation due to aneurysmal subarachnoid hemorrhage (aSAH).

**Patients and methods.**—Protocol for evaluation contains:

– all clinical data on patients;
– Hunt-Hess scale (clinical picture);
– Barthel index;
– Motor assessment scale (MASS) of motor deficit (scores from 0–54).

Evaluation has been performed: at the time of admission prior to intervention (Hunt-Hess scale), on the first postoperative day (MASS, Barthel index) and at the end of the 3rd week of early rehabilitation (MASS, Barthel index).

Protocol for rehabilitation consisted of kinesitherapy whose goal is to contribute to the motor recovery (walking, balance, hand function) and to the every-day activities. Rehabilitation has been conducted at the Intensive Care Unit during first 5–7 postoperative days and afterwards at the Neurosurgical Department.

**Results.**—Our study is retrospective (from 2010–2011) and it observe 36 patients: eight (28%) with lethal outcome, 28 (72%) were involved in the early rehabilitation. The average duration of rehabilitation was 20 days. According to Hunt-Hess scale, I° includes five patients, II° – 11 patients, III° – nine patients and IV° – 3 patients. MASS scale showed a recovery in group I° according to Hunt-Hess by 51.4 points, in group II° – by 41.3 points, in group III° – by 37 points and in group IV° – by 21 points. Barthel index showed a small dependency for 17% of patients, mild dependency for 71% and a complete dependency for 10% of patients in activities of daily living.

**Discussion and conclusion.**—In literature, there is insufficient data on early rehabilitation of patients after surgical treatment of aSAH. Our study shows that early postoperative rehabilitation of patients after aSAH is very important for the recovery of motor function and activities of daily living. Functional recovery is better among patients with a low score of Hunt-Hess scale.

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**P100-e**

**Reliability of goniometric measurement of ankle dorsiflexion in hemiparetic patients**

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**Keywords:** Goniometry; Equinus; Reliability

**Introduction.**—The equinovarus foot deformity is common in hemiparetic patients. Although widely used, the reproducibility of goniometric measurement of ankle dorsiflexion is little studied and variable [1]. The objective was to evaluate the intra/inter rater reliability of this measure, and to evaluate a new method of goniometric measurement of ankle dorsiflexion in hemiparetic patients.

**Methods.**—Prospective, monocentric study; all hemiparetic patients with a recent brain injury were included. Goniometric measurements of ankle dorsiflexion were performed on both healthy and hemiparetic sides, by four judges, and repeated a week later. Landmarks were free. The conventional method assessed equinus of the hemiparetic side. The S. Index was the difference between the dorsiflexion on the hemiparetic and healthy side. Intra and inter-rater reliability was calculated for both methods (conventional and S) with an intraclass correlation coefficient (ICC).

**Results.**—Twenty-eight patients were included (78.6% stroke, 17.4% brain injury). Intra-rater ICC ranged from poor to good for the classical method (0.50 to 0.75) and from poor to moderate for the S. method (0.36 to 0.66). Inter-rater ICC ranged from very poor to moderate (0.30 to 0.57) for the classical method and from poor to moderate (0.43 à 0.53) for the S. method. The S. method improved the intra-rater reliability of judges whose ICC was poor in the conventional method. The learning effect was greater using the conventional method.

**Discussion.**—This study confirmed that the intra and inter-rater reliability of goniometric measurements of equinus was not satisfying, whatever the method. The search for a method that has better metrological qualities is necessary. Inter-rater reproducibility seemed to be better for the method S. This method could also help to overcome the learning effect, and reduce variations in measurements related to lack of experience. It would be interesting to study this new method further.

Reference


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**P101-e**

**Short term effects of neck muscle vibration on balance control of stroke patients: A preliminary study**

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**Keywords:** Stroke; Neck muscle vibrations; Posturography; Hemiplegia

**Introduction.**—Proprioceptive stimulation by neck muscle vibrations could improve the space representation of stroke patients and correct the center of pressure shift (CoP). This study aimed to assess the short-term effect of this stimulation and to compare the effect after a first right (RHS) or left (LHS) hemisphere stroke.

**Materials and methods.**—The lateral shift has been measured with a force platform, eyes opened and then eyes closed, before and after ten minutes of neck muscle vibration in 14 patients with stroke less than 6 months (seven RHS and seven LHS), mean age 60.3. The stimulation was located on the contralesional neck muscles.

**Results.**—Before vibration, RHS patients (19.8 ± 8.4 mm) were more shifted than LHS patients (18.5 ± 4.3). After vibration, only RHS patients improved significantly their lateral shift with closed eyes (p = 0.005).

**Discussion and conclusion.**—The 1st results show that proprioceptive sensory stimulation by neck muscle vibration could correct the CoP shift in right hemisphere stroke patients. This stimulation could recalibrate the sensory integration and improve the representation of space after stroke. The neck vibration could be used for rehabilitation of balance disorders of right stroke patients.

**Further reading**


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