aimed to quantify the degree of contracture in 8 key muscles at a chronic stage after the lesion.

Methods Four independent raters assessed 18 adults with chronic hemiparesis (age: 50 ± 14, mean ± SD; time since lesion 5.3 ± 2.4 years) treated with guided self-rehabilitation contracts (GSC) [1], using the 5-step clinical assessment [2] previously described, of which step 2 evaluates passive range of motion (angle of arrest at slow speed, X


was used to test whether MRI data obtained one to four months after a first ischemic stroke ameliorate the prediction of further recovery. Coefficients of shortening (C


and of spasticity (C


were derived. Muscles assessed were shoulder extensors (SE), elbow flexors (EF), wrist flexors (WF), finger flexors (FF), glutaeus maximus (GM), rectus femoris (RF), soleus (SO) and gastrocnemius muscles (GM).

Results Mean values were: SE, C


= 0.21 ± 0.03; C


= 0.25 ± 0.03; EF, C


= 0.04 ± 0.02; C


= 0.27 ± 0.04; WF, C


= 0.07 ± 0.02; C


= 0.24 ± 0.04; FF, C


= 0.16 ± 0.04; C


= 0.32 ± 0.04; GM, C


= 0.16 ± 0.03; FF, C


= 0.13 ± 0.02; RF, C


= 0.09 ± 0.01; C


= 0.26 ± 0.03; SO, C


= 0.15 ± 0.02; C


= 0.10 ± 0.01; GM, C


= 0.21 ± 0.01; C


= 0.12 ± 0.01. There was a suggestion of negative correlation between C


and C


(Pearson’s r = −0.37, NS).

Conclusion In chronic hemiparesis, plantar flexors and shoulder extensors were the most shortened muscles, followed by glutaeus maximus and finger flexors. This might represent an incentive to promote more aggressive posturing in the acute stages to maintain length of these important muscle groups.

Keywords Muscle contracture; Chronic hemiparesis; Self-rehabilitation

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

References


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CO14-001-e MRI ameliorates the prediction of further clinical evolution even months after ischemic stroke

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Background Late recovery after a first ischemic stroke is highly variable and its predictors are unknown. The present study aims at determining whether MRI data obtained one to four months after a first ischemic stroke help to predict clinical evolution up to 2 years. Methods Patients included in the PERFORM MRI study, an ancillary study of the PERFORM randomized control trial of terutroban against aspirin in secondary prevention of vascular ischemic events were selected. Mixed-effect regression modelling was used to test whether MRI data obtained one to four months after a first ischemic stroke ameliorate the prediction of further recovery, up to 2 years, compared to clinical data alone. Outcomes to predict were disability (modified Rankin Scale [mRS] and NIH Stroke Scale [NIHSS]) and cognition (MMSE, Isaac’s Set Test [IST] and Zacco’s Cancellation Test [ZCT]). MRI markers were designed as the total lesion load on FLAIR (FLAIR_vol) and brain volume [brain parenchymal fraction [BPF]] on T1, both normalized to intracranial cavity volume. Age, gender, level of education and initial value of the outcome to predict were systematically entered as covariates in predictive models based on clinical data alone. FLAIR_Vol, BPF and microbleed number were added to those variables in predictive models based on clinical and imaging data. Predictive ability of both types of models were compared.

Findings Five hundred and ninety-two patients of mean age 67.3 ± 7.8 years were included. Models based on clinical and MRI data were significantly better predictors of mRS, MMSE, IST and ZCT, compared to models based on clinical data alone.

Interpretation MRI data that can be easily extracted from routine sequences help to predict further recovery even months after a first ischemic stroke. The use of MRI in this context may help to select patients for which rehabilitation will be the most beneficial.

Keywords Ischemic stroke; MRI; Brain parenchymal fraction; Disability; Cognitive impairment; Post-stroke recovery

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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CO14-002-e How to predict requirement for rehabilitation following stroke: An analysis of the Rhône-Alpes inpatient database

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Objective To predict the requirement for rehabilitation unit after acute care hospitalization for stroke: how many and which type of rehabilitation unit?

Population Data were obtained from the Rhône-Alpes inpatient database in Acute Care and Rehabilitation. All acute care hospitalization for stroke in Rhône-Alpes region were considered.

Method Five groups of acute stroke inpatients where determined according to the type of discharge required (rehabilitation, nursing home or home . . . ) applying recommendation of the French Society of Physical Medicine and Rehabilitation (Sofmer). These groups were determined analyzing information contained in database (age, comorbidity, medical procedure, wards . . . ). For each of the 5 groups, the type of discharge required was compared with the real discharge of the patient. When patients were admitted in rehabilitation units, logistic regression model was used to analyze effect of the type of rehabilitation (neurological unit or no) on dependence score improvement.

Results (1) Type of discharge required: among the 7511 discharges of surviving acute stroke, 858 (11%) had no indication for rehabilitation and should be supported in nursing home, 389 (5%) had very serious clinical conditions and required specialized post-acute care rehabilitation units, 1255 (17%) required an hospitalization in general or geriatric rehabilitation unit because of their bad prognosis factors of functional outcome and 1865 (25%) required a PMR unit. (2) When hospitalization in a PMR unit was required, 896 (48%) were actually admitted in rehabilitation unit, of which 703 in PMR. Those admitted in PMR had a greater probability of functional improvement compared with no neurological unit (aOR = 1.64 [1.09–2.46]) after adjustment for age, comorbidity, initial level of dependence, and the duration of hospitalization.

Discussion Predicting and characterizing the requirement for rehabilitation center following acute stroke can help to optimize the orientation in the care pathway for better efficiency.