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Symposia and Free Communications

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heterogeneous clinical entity can be subcategorized in low-MCS (i.e., patients showing movements to command) and high-MCS (i.e., patients only showing non-reflex behavior such as visual fixation or pursuit or localization of noxious stimuli), each characterized by its own specific residual cerebral brain function.

Methods: Using FDG-PET, we assessed regional cerebral glucose metabolism (rCMRGlucose) in 16 low-MCS (10 men; mean age 46 [SD 19] years; 5 traumatic) and 21 high-MCS (16 men; mean age 39 [SD 15] years; 11 traumatic). Data were preprocessed and analyzed by means of statistical parametric mapping (SPM5). Results were thresholded for significance at $p < 0.05$ corrected for multiple comparisons.

Results: Compared to low-MCS, high-MCS patients showed higher rCMRGlucose in Broca's and Wernicke's regions (areas 44 & 45, peak voxel $x y z$ stereotaxic coordinates $-42 12 4$ mm; T value = 2.50). Other identified areas were premotor, postcentral and precentral cortices (areas 6, 3 and 4; coordinates $-8 -6 66$ mm; $T = 3.62$).

Conclusion: The difference in brain metabolism between high- and low-MCS was not identified in widespread frontoparietal "consciousness areas" but in language, sensorimotor and premotor areas. These findings suggest that the main difference between these two subcategories of MCS, clinically separated by the presence of command-following, is their ability to express consciousness (verbally or non-verbally) rather than their level of consciousness per se.

Reference:

1. Giacino et al (2002) The minimally conscious state: definition and diagnostic criteria. *Neurology*

O82

Attitudes towards disorders of consciousness: do Europeans disentangle vegetative from minimally conscious state?

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Objectives: The vegetative state (VS) is characterized by wakefulness without awareness. In chronic VS (i.e. >1 year), medical guidelines consider treatment withdrawal (artificial nutrition and hydration; ANH) ethically justifiable. The minimally conscious state (MCS) characterizes patients with more than reflex behavior (i.e., inconsistent but clearly discernible evidence of consciousness, lack of interactive communication or functional object use). At present, there are no generally accepted standards of care for MCS patients. We here surveyed the attitudes of European doctors, paramedical professionals and non-medical professionals on end-of life decisions in these challenging patients.

Methods: A questionnaire on end-of-life issues was presented to attendees of meetings on coma and disorders of consciousness. Data were obtained from 1,739 respondents (mean age 40 ± 14 years, range 16–83; 51% women; 48% Belgian and 52% other EU citizens).

Results: 65% of all respondents considered it acceptable to stop ANH in patients in chronic VS (2% non-respondents). A significant disagreement with ANH withdrawal was expressed by religious respondents (vs. non-religious; $B = -0.454$, $p < 0.0001$) and by women (vs. men; $B = -0.364$, $p = 0.003$). There was no effect of professional background on this statement ($\chi^2(2,1) = 0.998$, $p = 0.607$). The vast majority (81%) of all respondents would not like to be kept alive if they themselves were in permanent VS (1% non-responders). The majority (78%) also considered that being in a permanent VS is worse than death for the patient's family (51% considered it worse than death for the patients themselves).

Twenty-nine percent of responders considered it acceptable to stop ANH in patients in chronic MCS (1% non-respondents). Religious respondents disagreed significantly more with this statement as compared to non-religious respondents ($B = -0.634$, $p < 0.000$). 67% would not like to be kept alive if they themselves were in chronic MCS (1% non-respondents). 44% considered that being in a MCS is worse than VS for the patient's family (52% considered it worse than VS for the patients themselves).

Conclusion: The sampled European respondents report different end-of-life attitudes towards VS and MCS patients. These findings raise important ethical issues concerning our care for patients with chronic disorders of consciousness. In light of the high rates of diagnostic error in these patients, the necessity for adapted standards of care for MCS as compared to VS is warranted.

O83

Inpatient and outpatient rehabilitation in subjects with multiple sclerosis. A prospective and 6 months follow-up study

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In this study we evaluated differences in clinical and functional outcome of inpatient and outpatient rehabilitation in two different cohorts of patients with Multiple Sclerosis (MS) to detect how this treatment could impact in these outcomes after a 3 months follow-up evaluation.

We selected a group of 21 consecutive patients with both relapsing-remitting (RRMS) and secondary-progressive (SPMS) course of disease in two different region of Italy. All patients should have had worsening of their neurological condition of at least 1.0 point at Expanded Disability Status Scale (EDSS) in the last 12 months without superimposed relapses in the previous 3 months. Moreover they should be able to walk and with EDSS score between 3.5 and 6.5. A total of 9 subjects (3 RRMS, 9 SPMS) underwent to inpatient intensive rehabilitation programme in a Neurorehabilitation Dept. in Northern Italy and 12 patients (6 RRMS, 6 SPMS) followed the same programme in a outpatient clinic in Southern Italy. As outcome measure we evaluated EDSS, Barthel Index (BI), time to walk 15 feet (t15F) and 9-Hole-Peg-Test (9HPT). Both groups are similar in basal data such as age, sex, duration of disease, EDSS, BI, 9HPT; we evaluate outcome at the end of rehabilitation programme and after 3 months of follow up in which outpatient group continued its rehabilitative programme.

We found that inpatient and outpatient rehabilitation gave a significant improvement in EDSS score ($p < 0.0001$), 9HPT (right hand $p < 0.02$, left hand $p < 0.0001$), BI ($p < 0.02$) while seems to be no effective in t15F ($p = 0.09$). If we compare inpatient versus outpatient outcome, we found that first group have more significative improvement in EDSS, 9HPT and BI respect of outpatient group at the end of the intensive rehabilitation programme. This clinical benefit decrease progressively in the inpatient group in the first 3 months of follow-up. These results were confirmed at the end of the study, after 6 months.

Intensive rehabilitation seems to give a stronger beneficial effect in term of impairment and disability than the outpatient treatment; nevertheless the follow-up analysis showed that this gain is lost into few months in absence of an outpatient rehabilitative program.

INPATIENT AND OUTPATIENT REHABILITATION IN SUBJECTS WITH MULTIPLE SCLEROSIS. A PROSPECTIVE AND 6 MONTHS FOLLOW-UP STUDY

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