

SC326

Regaining consciousness after very severe TBI. Time course and predictors of early recovery from vegetative state.

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Background and purpose: The recovery from vegetative state (VS) is pivotal for patients with very severe TBI (vsTBI). Knowledge of factors associated with early recovery from VS may help predicting time course of recovery after vsTBI.

Methods: We studied 174 patients with vsTBI (post traumatic amnesia >4 weeks after injury) admitted consecutively to a single neurorehabilitation facility serving eastern Denmark (population 2.4 mill.). Demographic and clinical data were recorded prospectively. The Rancho Los Amigos Scale (RLA) on a weekly basis was used to score cognitive functioning. Improvement to level III on the RLA corresponds to recovery from VS. Adjusted multiple logistic regression models were used to evaluate predictors of early recovery within 4 weeks after injury. Time-to-event analyses were applied for analyses of time course of recovery.

Results: 50% emerged from VS within 1.6 weeks, and 75% within 2.9 weeks after injury. The following factors were associated with early recovery: Higher GCS at start of rehabilitation (RR 2.2 per 1 point; 95% CI 1.6 to 3.0), shorter acute phase (RR 1.9 per week; 95% CI 1.3 to 2.8), and older age (RR 1.2 per 5 years; 95% CI 1.0 to 1.5), whereas sex and length of sedation were not.

Conclusion: Most patients with vsTBI emerged from VS within 4 weeks of injury. Higher GCS at the beginning of rehabilitation, shorter length of acute treatment, and older age are associated with early recovery after vsTBI independent of sex and length of sedation.

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Residual language perception in patients in disordered states of consciousness - Evidence from EEG and fMRI

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In Apallic Syndrome (AS) self-awareness and awareness of environment is absent. Neuroimaging studies suggest normal brain activity can be measured in some AS patients. In early remission a patient exhibits deliberate or cognitively mediated behaviour, consistently enough, for clinicians to be able to distinguish it from reflexive responses. We recently reported a selective response in the medial prefrontal cortex (MPFC) to the subjects own name in a long-term AS patient. In this study we examined brain activity in response to the subjects own name in a larger sample of AS and patients in remission from AS. Brain activity was examined in 20 AS and 20 patients in early remission while hearing their own first name, compared with another name, using BOLD-fMRI and EEG. There was a control group of 10 subjects. Higher activity for the own compared to another name in the MPFC, a mismatch negativity, and a P300 in EEG was found in the control group. This was only found in 9 AS and 11 patients in early remission. Names resulted in an activation of the auditory cortex in all subjects, although with marked differences in strength and extent. Selective brain responses to one's own name was found in the control group and therefore seems to be a reliable paradigm to examine residual language perception in patients with severe disorders of consciousness. In line with previous studies, there was evidence that in some of the investigated patients the brain may still have some capacity for language perception.

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TUESDAY, SEPTEMBER 28, 2010

11:00 – 12:00

HALL B

**SHORT COMMUNICATIONS 3:
 REHABILITATION AND
 NEUROTRAUMATOLOGY**

CHAIRPERSONS:

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Armin Schnider, GENEVA, SWITZERLAND

SC324	Traumatic spinal cord injury and concomitant brain injury: a 50-year cohort study E.M. Hagen, G.E. Eide, T. Rekind, N.E. Gilhus, M. Gronning BERGEN, NORWAY	11:00
SC325	Rehabilitation outcome at one versus two years after traumatic brain injury M. Lippert-Grüner COLOGNE, GERMANY	11:10
SC326	Regaining consciousness after very severe TBI. Time course and predictors of early recovery from vegetative state. L.P. Kammersgaard, I. Poulsen, C. Engelmann, A. Norup, A.W. Engberg HVIDOVRE, DENMARK	11:20
SC327	Residual language perception in patients in disordered states of consciousness – Evidence from EEG and fMRI S.M. Golaszewski ¹ , M. Kronbichler ¹ , J. Bergmann ¹ , A. Kunz ² , Y. Krenn ² , W. Staffen ² , R. Nardone ^{1,2} , E. Trinka ² , G. Ladurner ² , F. Gerstenbrand ³ ¹ SALZBURG, AUSTRIA, ² MERAN, ITALY, ³ VIENNA, AUSTRIA	11:30
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