Abstract: OBJECTIVE: Hepatic encephalopathy (HE) is characterized by neuropsychological and motor deficits. The present study tested the hypothesis that worsening of motor and sensory symptoms of HE results from a common basic deficit in the cerebral oscillatory processing within the human motor and visual system. METHODS: We investigated in 32 patients with liver cirrhosis and HE grades 0-2 critical flicker frequency (CFF) and cortico-muscular (M1-EMG) coherence as a measure of coupling between the surface EMGs of hand muscles and primary motor cortex (M1) activity recorded non-invasively with magnetoencephalography (MEG) during forearm elevation. RESULTS: Patients with HE-grade 2 developed excessive M1-EMG coherence at low frequencies. In contrast, maximum M1-EMG coherence in patients with no HE showed frequency and amplitude in the physiological range. CFF was continuously reduced with worsening grades of HE. Correlation analysis revealed significant correlation between the frequency of M1-EMG coherence and CFF. CONCLUSIONS: Taken together, we demonstrate that increased grades of HE lead to a pathological M1-EMG drive which is reduced in frequency. These effects are correlated with an impaired perception of oscillatory visual stimuli. SIGNIFICANCE: The results suggest that pathological oscillatory neural processing in different human cerebral systems may represent a basic mechanism for the
clinical manifestation of HE.

Zeitschriftentitel / Abkürzung:
Clin Neurophysiol

Jahr: 2008
Band: 119
Heft / Issue: 2
Seiten: 265-72
Sprache: eng
Print-ISSN: 1388-2457
TUM Einrichtung:
Neurologische Klinik und Poliklinik

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Neurologische Klinik und Poliklinik > 2008

entries: