EXPLORING (DIS)CONNECTED CONSCIOUSNESS EPISODES AMONG UNRESPONSIVE PATIENTS IN THE RESUSCITATION ROOM: PRELIMINARY RESULTS

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Background: Growing evidence suggests that some patients who appear to be clinically unconscious during emergency procedures can experience episodes of "connected consciousness" (CC; awareness of the external environment) or "disconnected consciousness" (DC; environmental stimulus-independent mental content), including near-death experiences (NDEs).

Aims: This project aims to (1) prospectively explore the prevalence and the consequences of DC/CC among clinically unconscious patients admitted to the resuscitation room (RR), (2) characterize these episodes, and (3) pinpoint their underlying neurobiophysiological processes.

Method: In total, 201 “clinically unconscious” patients (i.e., ongoing sedation, intubation, cardiopulmonary resuscitation, a Glasgow Coma Scale score=3) will be enrolled. Here, we present the preliminary results of seven patients. An audio-visual system allows for an objective environmental control. Unexpected auditory and visual stimuli are displayed. Medical parameters are collected, and regional cerebral oxygen (rSO2) levels and a 6-channel electroencephalogram (EEG) are recorded. The prevalence and consequences of CC/DC are evaluated through semi-structured interviews (freely expressed narratives and standardized scales, including the NDE-Content scale permitting to identify NDEs) conducted within three days post-admission or -awakening, at 2 and 6 months.

Preliminary results: (1) We expect to find between 10% and 20% of patients reporting CC or DC, respectively. Out of seven unconscious patients included so far, six have survived. No CC was reported as no patient explicitly reported visual or auditory stimuli. However, two of them (33%) reported DC episodes. (2) These experiences have been identified as NDEs. (3) We here present the EEG results and cerebral oximetry data for one patient. The rSO2 values range from 61 to 90, with average value of 79 for both hemispheres. About the EEG data, the 58-minute recording has been divided into 10-time windows. Employing time-frequency spectral analysis with continuous wavelet transform, we observed an increase in beta and gamma activity, as well as a higher Lempel-Ziv Complexity index in windows 2 and 3 compared to the rest of the recording. We hypothesize that this time window may permit the emergence of an NDE.

Conclusions: Our project aims to detect and study CC/DC episodes in emergency patients, ultimately raising awareness of these episodes in the medical field and improving patient care.

Keywords: Consciousness, Near-death experiences, EEG, Memory, Emergency

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