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COMPREHENSIVE REVIEW

Recommendations for the use of electroencephalography and evoked potentials in comatose patients

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KEYWORDS
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Coma prognosis;
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Somatosensory evoked potentials;
Visual evoked potentials

Summary Predicting the outcome of a comatose or poorly responsive patient is a major issue for intensive care unit teams, in order to give the most accurate information to the family and to choose the best therapeutic option. However, determining the level of cortical activity in patients with disorders of consciousness is a real challenge. Reliable criteria are required to help clinicians in the decision-making process, especially in the acute phase of coma. In this paper, we propose recommendations for recording and interpreting electroencephalography and evoked potentials in comatose patients based on the literature and the clinical experience of a group of neurophysiologists trained in the management of comatose patients. We propose methodological guidelines and discuss prognostic value of each test as well as the limitations concerning recording and interpretation. Recommendations for the strategy and timing of neurophysiological assessments are also proposed according to various clinical situations.

Introduction

Predicting the outcome of a comatose or poorly responsive patient is a major issue for intensive care unit (ICU) teams, in order to be able to provide families with accurate information and to help with choosing the best therapeutic option. Reliable criteria are required to help clinicians in the decision-making process, especially in the acute phase of coma. French law (the Léonetti Act N° 2005-370 of April 22, 2005, concerning patients' rights and end of life care), states that ''the acts of prevention, investigation or treatment must not be continued with unreasonable obstinacy, when they seem useless, disproportionate or to have no other effect than solely the artificial preservation

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