**PO28   BISPECTRAL INDEX VALUES IN A BRAIN DEAD PATIENT – CASE REPORT**

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Brain death (BD) is a state of irreversible cessation of cerebral and brainstem functions and its diagnosis is mostly clinical.1 This report presents a case of a BD patient proposed for an organ donor surgery that was monitored with bispectral index scale (BIS).

**Case report:** A 57-year-old woman was scheduled an organ donor surgery after a confirmed BD diagnosis. A clinical diagnosis of brain death was made. A computed tomography brain angiography was performed and showed absence of flow in the intracranial vessels with persistence in the extracranial carotid circulation, which is consistent with brain death diagnosis. An electroencephalogram (EEG) was also made and revealed electrocerebral inactivity. The patient was admitted to the operating room in controlled ventilation, monitored according to ASA standards, BIS, and invasive arterial blood pressure. Median arterial pressure was maintained above 75 mmHg with noradrenaline perfusion.  A bolus of 150 mcg of fentanyl and 60 mg of rocuronium were administered to prevent the sympathetic response to surgical stimulation and to inhibit any possible motor response resulting from spinal cord reflexes, respectively. The BIS sensor revealed in the monitor values different from zero during most of the procedure (Figure 1). The quality of the sign was good and no electromyographic activity was identified. After the major organs were dissected and organ support was stopped, the BIS value changed abruptly to 0 and it remained so (Figure 2). Informed consent was obtained with family.

**Discussion:** This patient fulfilled all the criteria for brain death diagnosis. EEG showed electrocerebral silence consistent with brain death. However, EEG is not recommended as a supplementary test because it can incorrectly suggest the presence of electrical activity due to being easily affected by electromagnetic environment noise. 1 BIS monitoring is a similar tool comprising prefrontal cortex electrical activity in a value ranging from 0 to 100. It has been suggested to be a valuable instrument to BD diagnosis, as it is described in the literature that there is a positive correlation between BIS values and neurologic status, being particularly relevant in the early recognition of BD.2 Brain dead patients typically present BIS values of zero, however, similarly to our case, there are some reports of this set of patients showing unexplained greater values of BIS.2,3 BIS algorithm eliminates electrocardiography (ECG) and electromyography (EMG) artifacts and the latter can be excluded in our case, as it was given rocuronium. We consider that patient’s ECG or temporal artery pulsation was detected by the BIS sensor and not recognized as an artifact, as suggested in previous studies.3 BIS values should be interpreted with caution in the setting of brain death since it was not validated for those circumstances.

**References**

1 Jama, 324(11), 1078-1097.

2  Transplantation Proceedings, 44(9), 2702–2705.

3  Anesthesia & Analgesia, 98(3), 706-707.

  
  
