Reliability of the Telemedicine Examination in the Neurologic Diagnosis of Death

Objective To determine whether telemedicine technology can be used to reliably determine the neurologic diagnosis of death (NDD) in patients with catastrophic brain injury (CBI).

Methods We included a convenience sample of patients with CBI at a single academic medical center from November 2016 through June 2018. We simultaneously performed brain death evaluation at the bedside and remotely via telemedicine. Remote examiners were neurointensivists who were experienced and knowledgeable in the NDD. In addition to standard clinical examination, we used quantitative pupillometry to evaluate pupil size and reactivity. We determined the proportion of agreement for each NDD examination element and the overall diagnosis of brain death between bedside and remote examiners.

Results Twenty-nine patients with mean age 46 ± 18 years underwent 30 paired NDD examinations. Twenty-eight (97%) patients met the NDD criteria and were pronounced dead. One patient did not meet the NDD criteria and died after withdrawal of life support. With the exception of qualitative assessment of pupillary reactivity, we observed excellent agreement (97%–100% across NDD examination elements) between bedside and remote examiners and 97% agreement on the overall diagnosis of brain death. Unlike qualitative pupillary assessment, quantitative pupillometry was consistently interpretable by remote examiners.

Conclusion Our results suggest that remote telemedicine technology can be used to verify the findings of bedside examiners performing NDD examinations when a pupillometer is used to assess pupillary reactivity. When performed by neurocritical care experts, the telemedicine NDD examination has potential to facilitate timely and accurate certification of brain death in patients with CBI.

Classification of Evidence This study provides Class IV evidence on the concordance of neurologic NDD by telemedicine and bedside examiners.

Breakthrough Seizure Associated With Kratom Use in Patients With Epilepsy

Purpose of Review Kratom (mitragynine) is a commercially available herbal supplement that is gaining popularity in the United States. Kratom is associated with a variety of neurologic effects. This review will discuss kratom’s association with seizure through 3 cases and highlight what neurologists should know about kratom’s clinical effects and legal status.

Recent Findings Kratom is currently commercially available, unscheduled by the US Drug Enforcement Administration, and a topic of regulatory debate in the United States. Large poison center reviews have suggested that kratom use is associated with seizure. There have been limited case studies to corroborate this finding. We present 3 cases in which seizures were associated with kratom use in patients treated for epilepsy.

Summary Since 2008, kratom use is rising in prevalence in the United States aided by lack of regulation. Neurologists need to be aware of its association with seizure and other neurologic side effects.