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Importance of access to epilepsy monitoring units during the COVID-19 pandemic: Consensus statement of the International League against epilepsy and the International Federation of Clinical Neurophysiology ☆

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HIGHLIGHTS

- The COVID-19 pandemic has led to lockdown of many Epilepsy Monitoring Units.
- Postponing video-EEG monitoring of patients had detrimental effects.
- Access to video-EEG monitoring be given high priority.

ABSTRACT

Restructuring of healthcare services during the COVID-19 pandemic has led to lockdown of Epilepsy Monitoring Units (EMUs) in many hospitals. The ad-hoc taskforce of the International League Against Epilepsy (ILAE) and the International Federation of Clinical Neurophysiology (IFCN) highlights the detrimental effect of postponing video-EEG monitoring of patients with epilepsy and other paroxysmal events. The taskforce calls for action to continue functioning of Epilepsy Monitoring Units during emergency situations, such as the COVID-19 pandemic. Long-term video-EEG monitoring is an essential diagnostic service. Access to video-EEG monitoring of the patients in the EMUs must be given high priority. Patients should be screened for COVID-19, before admission, according to the local regulations. Local policies for COVID-19 infection control should be adhered to during the video-EEG monitoring. In cases of differential diagnosis where reduction of antiseizure medication is not required, consider home video-EEG monitoring as an alternative in selected patients.

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1. Background and justification

The International League Against Epilepsy (ILAE) and the International Federation of Clinical Neurophysiology (IFCN) appointed an ad-hoc taskforce to provide a rapid response to the challenges concerning video-EEG monitoring, encountered during the current pandemic, caused by the coronavirus SARS-CoV-2 disease (COVID-19). Through consensus discussions, review of the published evidence and experience of the experts representing the two societies, the ad-hoc taskforce elaborated this statement.

During the restructuring of healthcare services due to the current pandemic, many hospitals closed video-EEG monitoring facilities, referred to in this document as Epilepsy Monitoring Units (EMU) (Krysl et al., 2020). A European survey showed that in most centers, inpatient video-EEGs monitoring had been stopped (61.7% for adults, 36.2% for children) or was restricted (38.3% for adults, 53.2% for children) (Krysl et al., 2020), with detrimental effects on patients with complex and severe epilepsy and other paroxysmal events (Krysl et al., 2020), such as lack of optimizing the medical treatment and lack of evaluation for epilepsy surgery. There is limited likelihood of triggering seizure emergencies in patients with epilepsy and neurological complications. The measures of closing EMUs were adopted by healthcare providers to focus on re-allocation of resources to services considered more important, more immediately required, and to prevent spreading the disease. Long-term video-EEG monitoring in EMUs was regarded by the healthcare providers as an elective procedure that could be postponed without significant consequences, a categorization that we challenge as incorrect for the following reasons.

Long-term video-EEG monitoring is an essential diagnostic tool in patients with complex and severe epilepsy (Kobulashvili et al., 2018; Tatum et al., 2018). The main indications are: diagnostic and presurgical evaluation (Kobulashvili et al., 2018; Tatum et al., 2018). While video-EEG monitoring is diagnostic, it has direct implications on treatment of epileptic seizures, co-morbidities and important differential diagnoses (arrhythmia and cardiac death, psychogenic non-epileptic seizures and the risk of suicide).

Reasoning for continuing the diagnostic monitoring: approximately one third of patients referred to specialized centers on suspicion of drug-resistant epilepsy, do not have epilepsy (Chadwick & Smith, 2002; McBride et al., 2002; Asano et al., 2005; Uldall et al., 2006). Persistent misdiagnosis of paroxysmal events, often cardiac or psychogenic in origin, has severe consequences for them (Ferrie, 2006; LaFrance & Benbadis, 2006; Nightscales et al., 2020). In patients with drug resistant epilepsy, misclassification of the seizure-types can lead to inadequate choice of antiseizure medication (Kobulashvili et al., 2018). Video-EEG recording of the patient́s habitual clinical episodes is the diagnostic gold standard for patients with unclear paroxysmal events (Kobulashvili et al., 2018; Tatum et al., 2018).

Reasoning for continuing presurgical evaluation: epilepsy surgery is the evidence-based treatment in patients with drug-resistant focal epilepsy (Wiebe et al., 2001; Engel et al., 2012; Dwivedi et al., 2017). This requires video-EEG recording of the seizure and in around one third of patients invasive monitoring (Kobulashvili et al., 2018; Tatum et al., 2018). Failure to proceed towards surgery, unnecessarily exposes the patients to further seizures, injuries associated with seizures and the risk of Sudden Unexpected Death in Epilepsy (SUDEP) (Devinsky et al., 2016). The appropriate and unrestricted utilization of EMUs in comprehensive epilepsy centers has been shown to reduce mortality of patients with epilepsy (Lowerison et al., 2019).

High quality epilepsy care, including video-EEG monitoring has decreased morbidity and mortality (Lowerison et al., 2019; Hargreaves et al., 2019; Granbichler et al., 2017). Hence, increasing waiting times can cause considerable problems, with increasing morbidity and mortality. These patients often have worsening epilepsy, co-morbidities, and prioritizing care with restricted resources becomes more and more challenging. Some EMUs managed to continue video-EEG monitoring during the pandemic (Krysl et al., 2020). Using measures of prevention and protection generally adopted in the hospitals, these EMUs were able to continue this important diagnostic function, without causing local outbreaks (Lowerison et al., 2019; Krysl et al., 2020; Joint proposals, 2020; Gélisse et al., 2020). Recommendations for neurophysiology staff with risk factors for COVID-19, and for mental health of the staff have been proposed by the Latin American chapter of the IFCN Task Force – COVID-19 (San-Juan et al., 2020).

2. Summary statements

The ILAE-IFCN ad-hoc taskforce issues the following statement, related to functioning of the EMUs, during the COVID-19 pandemic:

1. Long-term video-EEG monitoring is an essential diagnostic service.
2. Access to video-EEG monitoring of the patients in the EMUs must be given high priority.
3. Patients should be screened for COVID-19, before admission, according to the local regulations.
4. Local policies for COVID-19 infection control should be adhered to during the video-EEG monitoring.
5. In cases of differential diagnosis where reduction of antiseizure medication is not required, consider home video-EEG monitoring as an alternative in selected patients.

3. Conclusion

The ILAE-IFCN ad-hoc taskforce calls for action to ensure that healthcare providers understand the importance of providing diagnostic services for patients with epilepsy and paroxysmal events, and that EMUs continue functioning during emergency situations like the COVID-19 pandemic, while adhering to local healthcare policies.

4. Disclaimer

This report was written by experts selected by the International League Against Epilepsy (ILAE) and the International Federation of Clinical Neurophysiology (IFCN) and was approved for publication by the ILAE and IFCN. Opinions expressed by the authors, however, do not necessarily represent the policy or position of the ILAE and IFCN.

5. Conflict of interest statement

Sándor Beniczky reports speaker honoraria and personal fees from: Natus Neuro, Philips EGI, Epihunter, UCB Pharma, Eisai and Bial-Portela, outside this work.

Aatif Husain has received personal compensation for consulting from: UCB Pharma, Jazz Pharma, BlackThorn Therapeutics, Eisai Pharmaceuticals, Marinus Pharmaceuticals, Neurelis Pharmaceuticals, and Merck. He has also received royalties from Wolters Kluwer, Springer and Demos Publishers. Additionally, he has received stipend for editorship from American Clinical Neurophysiology Society.

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Jo Wilmshurst receives an honorarium for her role of associate editor for Epilepsia.

M Seeck received speaker's fees of EGI Philips, holds shares of Epilog and received consulting fees from the Wyss Foundation.

N. K. Focke received speaker bureaus and consultancy fees from Bial, Eisai and EGI/Phillips outside the submitted work.

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