Outpatient Smartphone Videos for Classifying Epileptic and Nonepileptic Seizures

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Abstract

BACKGROUND: Seizures are common in clinical practice and diagnosis is often challenging. This study evaluated the use of smartphone videos (SV) for evaluation of in-clinic presentations of seizures and spells. A prospective study compared two groups of patients: those who underwent traditional home video monitoring (VEM) and those who had SVs recorded by patients.

METHODS: In this prospective study, 41 patients (28 F, age 15–30) with confirmed epilepsy were screened. Patient videos and hand physical examinations (H & P) were acquired and reviewed prior to VEM. Forced choice diagnosis of 1) ES, 2) PNES, or 3) Dual Dx was performed. Patient charts were reviewed. Two blinded experts and 10 residents reviewed SVs. Diagnostic accuracy was calculated using overall and per rating tool.

RESULTS: Table 1: Demographics

Table 2: ES vs PNES SV

Table 3: SV Correct Diagnosis

Table 4: Level of Confidence

CONCLUSIONS: The widespread availability of SV makes them a useful tool for evaluation of patients with suspected seizures and spells. For those participating in the trial, all SVs were acceptable for interpretation within one week. Overall, SVs were of sufficient quality for interpretation in the setting of clinical practice. Thanks to Meghan Conroy for her support and Megan Duckrow for her work on the statistics.

Figure 1: VEM Diagnosis

Figure 2: Semiology

Figure 3: SV Correct Diagnosis

Figure 4: Level of Confidence

Figure 5: SV Quality

References

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Acknowledgments

This study is supported by National Institute of Mental Health (NIH) and the Mayo Clinic Center for Neuroscience.

Figure 5: SV Quality