

# Dissociative seizures in the emergency department: how to solve the problem of diagnostic confusion leading to iatrogenic harm?

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## Dissociative seizures are frequently misdiagnosed and treated as epileptic seizures in emergency settings, but simple educational interventions may help

Over the last 20 years, there has been a renaissance in the study of functional neurological disorders (FNDs). Alongside an improved understanding of their involuntary nature,<sup>1</sup> and mechanistic and aetiological complexities,<sup>2</sup> there is an increasing recognition of the iatrogenic harm and socioeconomic costs associated with these disorders.

Dissociative seizures are the most common form of FND. They look like epileptic seizures but are not caused by epileptiform discharges. Individuals with dissociative seizures have elevated morbidity<sup>3</sup> and mortality rates,<sup>4</sup> and significant associated healthcare costs.<sup>5</sup> Individuals will typically present to an emergency department, often more than once. This should therefore provide an ideal opportunity to make a positive diagnosis, triage individuals into appropriate treatment pathways and ultimately reduce iatrogenic harm and socioeconomic costs. However, the *JNNP* study by Cengiz *et al*<sup>6</sup> provides a rich description of how and why this is a *missed* opportunity due to diagnostic confusion.

Building on their previous work of misdiagnosed status epilepticus,<sup>3</sup> they retrospectively review 203 dissociative seizure presentations over 13 years. They report that only 12% of cases were correctly diagnosed by paramedics and accompanying emergency physicians, and 62% by neurologists based in the emergency department. And yet, 64% of individuals had at least one, and 28% had two or more,

semiological features that are red flags for dissociative seizures. The misdiagnosis of individuals presenting acutely has significant implications. Seventy per cent of attendances resulted in admission, including to intermediate and intensive care settings, and 40% received benzodiazepines. The median cumulative dose of benzodiazepines received was 28 mg of diazepam equivalent, and individuals with hyperkinetic seizures or reduced levels of responsiveness were especially at risk of overtreatment. One of the aims of the study was to understand the risk–benefit ratio for the use of benzodiazepines for dissociative seizures. The authors report that in 60% of those receiving such medications, seizures stopped, but they also note that 13% of individuals became stuporous/comatose, and benzodiazepine administration was the primary predictor of admission to the intensive care unit. Given these findings, alongside their potential to exacerbate dissociative symptoms, and the probable role of placebo or regression to mean (spontaneous seizure resolution regardless of medication use) effects, the role of benzodiazepines is limited unless there is diagnostic uncertainty, and they should be judiciously used at best.

There are problems associated with a retrospective study of this nature. It is limited to a single centre, and half the discharge codes were based solely on patient/witness reports of seizures. Despite these limitations, this study shines a light on the problem of diagnosing and managing functional seizures in an emergency setting, but perhaps most important of all, it also offers a glimmer of hope. Rates of benzodiazepine use dropped from 78% to 41% after an educational session about the semiological features

differentiating dissociative and epileptic seizures. This highlights the need for simple educational interventions to reduce diagnostic confusion and ensuing harm. Coupled with the development of guidelines on the acute management of functional seizures,<sup>7</sup> there is the potential to do better for our patients.

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