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Letter to the Editor

Delirium in Critically ill PICU Patients should not be Diagnosed Based on Scores Alone, but also by Clinical, Chemical, Imaging, and EEG Assessment

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Letter to the Editor

We read with interest the article by Nashit *et al*. on a cross-sectional study of the prevalence and risk factors of delirium, assessed using the Cornell Assessment of Pediatric Delirium (CAPD), in 201 critically ill pediatric patients aged 1 month to 14 years admitted to a pediatric intensive care unit in Karachi [1]. One quarter of the patients, with a mean age of 5.1 years, were diagnosed with delirium [1]. Risk factors included comorbidities, developmental delays, benzodiazepine use, antiepileptic drug use, high-flow oxygen administration, and mechanical ventilation [1]. The study is noteworthy, but some points require discussion.

The first point is that the reason for the admission of the 201 children was not specified [1]. It is important to know the diseases responsible for admission to the PICU, as they may be risk factors for delirium and should therefore be included in the analysis. Since delirium can be caused by infections (e.g., pneumonia), medications (e.g., opiates), drug abuse, metabolic disorders (e.g., electrolyte imbalances, acidosis, alkalosis, dehydration), organ failure (e.g., renal failure, liver failure), poisoning, surgery, or sleep deprivation, environmental factors (e.g., sensory overload), visual or hearing impairments, severe pain, constipation, or other disorders, these conditions should be be considered risk factors or triggers for pediatric delirium [2]. In addition, comorbidities that occurred during the stay in the pediatric intensive care unit should also have been included in the analysis.

The second point is that the patients included were not systematically subjected to cerebral imaging [1]. In order to assess the entire spectrum of causes of delirium, it is crucial to perform either a computed tomography or magnetic resonance imaging scan of the brain. As long as cerebral imaging is not performed, causes of delirium such as stroke, tumor, encephalitis, meningitis, or head trauma [3] may be overlooked.

The third point is that differential diagnoses for delirium such as epilepsy, depression, psychosis, catatonia, and dementia were not sufficiently ruled out [1]. In order to rule out non-convulsive status epilepticus (NCSE) or minimal convulsive status epilepticus as a differential diagnosis for delirium [4], it would have been essential to record an EEG for each of the included patients.

The fourth point is the discrepancy between the inclusion criterion “minimum stay in the pediatric intensive care unit of at least 24 hours” and the performance of CAPD twice daily on three consecutive days [1]. For example, if a patient was only in the pediatric intensive care unit for 25 hours, CAPD could not have been performed according to the requirements in the “Method” section [1]. This discrepancy should be resolved. All patients who were admitted for less than three days should therefore be excluded from the study.

The fifth point is that delirium should be diagnosed according to established criteria [5] and not solely on the basis of scores. In order to assess the validity of the CAPD, the included patients should have been diagnosed using both methods so that it can be determined how many false-positive and false-negative diagnoses were made with the CAPD.

It is not clear how mechanical ventilation can be a risk factor for delirium, as only three of 201 patients (one with delirium) were mechanically ventilated.

Overall, delirium in PICU patients requires diagnosis according to established criteria and a thorough investigation of the underlying causes and potential triggers in order to treat the condition appropriately and prevent recurrence.

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