

## In reply to: «The diagnosis of delirium in pediatric intensive care: A burdensome yet essential task»<sup>☆</sup>



### En respuesta a: «Diagnóstico del *delirium* en pediatría: una tarea ardua pero imprescindible»

To the Editor,

We truly appreciate the interest shown by Rodríguez-Rubio et al.<sup>1</sup> to our article on the characteristics of delirium in 5-to-14-year-old critically ill children published on *MEDICINA INTENSIVA*. Their comments encourage us to discuss fundamental concepts on the phenotype of this disorder, screening, and risk factors often treated superficially in research reports.

Conscience is being able to know self-feelings, thoughts, and acts. Delirium—a mental disorder according to the WHO—is the disturbance of conscience when there is a low level of awareness as a consequence of a medical condition.<sup>2</sup>

Experimental psychopathology has defined the combination of 3 core domains that are characteristic in this disturbance: cognitive, higher-order thinking, and circadian domains (see our article). On the other hand, fluctuating behavioral disorders are suspicious of delirium, but are nonspecific because are not easy to distinguish from the behavioral response to the underlying disease or pain. Also, it is difficult to attribute them to conscience disorders in cases of mental disability or triggering factors like electrolytic disorders or iatrogenic withdrawal syndrome. And vice versa, as it occurs with delirium itself, the precipitating entities of delirium show nonspecific symptoms like a cluster of more characteristic clinical aspects.<sup>3</sup>

Because there is not always a psychiatrist available, delirium screening tools are useful for the treating team, but they need to reflect the core mental disorders of the clinical manifestations as good as possible.<sup>4</sup>

The pCAM-ICU and the CAPD rating scales are useful tools to screen delirium at the PICU setting. They have both been validated opposite to a psychiatrist's criterion based on the DSM-IV criteria. The first one assesses the fluctuation of mental state in 24h in one single application while taking into account symptoms of 2 different domains: cognitive domain (awareness) and higher-order-thinking domain (disorganized thinking). The latter assesses repeated observations over a watch of motor fluctuations (circadian domain) and in nonspecific behaviors such as being inconsolable or responding to interactions. The pCAM-ICU Youden's index is 0.830 and the CAPD Youden's index is 0.733. Higher pCAM-ICU Youden's indices equal more validity (fewer false positives and negatives) and more representative of the core characteristics of delirium. In this sense, it is significant to see that in the presence of mental disability the specificity of the CAPD score drops to 0.512.<sup>5,6</sup>

These considerations confirm that we are right when choosing the cross-sectional application of the pCAM-ICU rating scale to report the prevalence of delirium.

Rodríguez-Rubio et al. think that our study contradicts the medical literature because it did not find any correlations between the administration of benzodiazepines and a higher risk of delirium in the PICU under study. As confirmatory examples they refer to such a correlation in the studies published by Smith et al. (2017) and Madden et al. (2018).<sup>7,8</sup> We believe there is no consensus among the different researchers on the factors associated with delirium. Without going any deeper on this issue, their examples somehow validate our position on the lack of unanimity: while the former authors refer to a moderate increase in the risk of suffering this disorder based on the dose of benzodiazepines, the latter found no causal relation whatsoever.

We stand by what we say in our article: we need studies in units that work differently, special centers or with many patients on deep sedation. All these characteristics modify the impact exerted by several factors on delirium

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C. Ricardo Ramírez<sup>a,\*</sup>, M. Álvarez Gómez<sup>b</sup>,  
J.G. Franco Vásquez<sup>a</sup>

<sup>a</sup> *Grupo de Investigación en Psiquiatría de Enlace, Escuela de Ciencias de la Salud, Facultad de Medicina, Universidad Pontificia Bolivariana, Medellín, Colombia*

<sup>b</sup> *Grupo de Investigación en Cuidado, Escuela de Ciencias de la Salud, Facultad de Medicina, Universidad Pontificia Bolivariana, Medellín, Colombia*

\* Corresponding author.

*E-mail address:* [carmenza.ricardo@upb.edu.co](mailto:carmenza.ricardo@upb.edu.co)  
(C. Ricardo Ramírez).

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