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## Constipation in critically ill patients: much more than we imagine

*Constipação intestinal em pacientes graves: muito mais do que imaginamos*

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Constipation is a common complication in critically ill patients, but there is limited information available in the literature on this disorder. A number of factors increase the frequency of constipation among patients admitted to intensive care, such as shock, the use of sedatives and opioid agents, electrolyte disturbances and changes in diet.<sup>(1,2)</sup> The incidence of constipation in the intensive care setting varies widely among studies, and it can range from 5 to 83%.<sup>(1-5)</sup> Such variation is directly related to the lack of a precise definition. In the guidelines of the American Gastroenterological Association, constipation is defined as fewer than 3 bowel movements per week, feelings of incomplete evacuation, hard stools, difficulty passing stools or the need for manual maneuvers for rectal emptying.<sup>(6)</sup> Some of these criteria, however, are subjective and difficult to apply in critically ill patients undergoing mechanical ventilation. Published studies on the topic mainly use the frequency of bowel movements during hospitalization or the time between admission to the intensive care unit (ICU) and the first bowel movement as the primary factors that define constipation among critically ill patients.<sup>(1,2,4,5,7,8)</sup>

By understanding the incidence, pathophysiology and consequences of constipation in critically ill patients, strategies for prevention and treatment of this complication can be developed. As already mentioned, constipation has multiple potential causes, but its consequences are not well defined. Constipation could be associated with increased intra-abdominal pressure, reduced nutritional intake, bacterial hyperproliferation, injury of the intestinal mucosa and bacterial translocation through the injured mucosa. Patients who develop constipation often have gastroparesis and paresis of the ileum, conditions that hinder the progression of nutritional support. The resulting inadequate nutritional intake may result in a worse prognosis by reducing the patient's overall muscle strength and functional capacity, reducing the ability to synthesize new tissues and wound healing, increasing the number of infections and increasing the time of hospitalization and the morbidity and mortality. Constipation may be associated with a longer time on mechanical ventilation.<sup>(1,5)</sup> Abdominal distension may hinder the action of the diaphragm, decrease lung compliance and increase respiratory effort.<sup>(2)</sup> In some patients, constipation may be associated with increased intra-abdominal pressure, with consequent reductions in lung compliance and increases in intra-thoracic and pleural pressure, which can cause edema and atelectasis.

Constipation is more than an intestinal motility problem or even an epiphenomenon in critically ill patients; it may be part of a broader context of acute intestinal dysfunction. Acute intestinal dysfunction is common among critically ill patients, but it can be difficult to diagnose because of

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the lack of a widely accepted and uniform definition. The presence of constipation seems to be a key factor in that definition. The inclusion of constipation within the context of organ dysfunction is most likely what explains its correlation with the poor progression of critically ill patients.<sup>(1,2,7)</sup> Despite some conflicting data, most of the evidence correlates constipation with a negative outcome in ICU patients.<sup>(1,2,4,7-12)</sup> In ICU patients, constipation has been associated with increased duration of mechanical ventilation, increased hospitalization time, worsening of organ dysfunctions and even increased mortality. Thus, constipation treatment could result in a better prognosis by reducing the occurrence of related complications.

Considering that studies that address epidemiological aspects associated with constipation are very rare, those that address the treatment of constipation are even less common. In a randomized clinical trial, patients who used laxatives to promote bowel movements had shorter hospitalization times. In the same study, a multivariate analysis identified the Acute Physiologic Chronic Health Evaluation II (APACHE II) score and the time to fecal production as independent variable that were predictors of mortality.<sup>(2)</sup>

In the present edition of the Brazilian Journal of Intensive Care (Revista Brasileira de Terapia Intensiva - RBTI), Guerra et al. presented a retrospective and observational study conducted in a Brazilian public ICU. The authors reported a high incidence of constipation (72%) among patients undergoing mechanical ventilation who had nutritional support initiated within 72 hours of hospitalization.<sup>(13)</sup> The results are limited by their

unicentric and retrospective nature and by the exclusion of most of the patients who were admitted during the study period, which resulted in a small number of patients analyzed. Nonetheless, the article has the merit of addressing a subject that is minimally studied. The study is important because it highlights the high frequency of this problem in our context and presents an incidence similar to the one found by Nassar et al.<sup>(4)</sup> and other authors.<sup>(1,7)</sup> The criterion used to define constipation was the absence of bowel movements in the first 4 days of hospitalization, consistent with previous studies. This incidence could be even greater if the criterion used was the absence of fecal evacuation for more than 3 days at any time during the hospitalization period. Even in the group without constipation, the time until the first bowel movement was quite long (2.8 days). In the study by Guerra et al.<sup>(13)</sup>, the association between a lack of bowel movements during hospitalization and longer hospitalization time was also observed. The study's limitations may not have allowed the detection of other risk factors. Nevertheless, it has merit because it raises an important issue that may be involved in the genesis of organ dysfunction.

Currently, the main question is to determine whether constipation is just a marker of severity and poor prognosis in critically ill patients or if it constitutes a dysfunction that must be prevented and treated because it effectively contributes to a worsening clinical condition for the patient. Unfortunately, studies that help us understand the constipation scenario in ICUs are scarce. Given the relevance of the issue, further epidemiological and clinical studies should be conducted and will be very welcome.

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