

# Serial Ultrasonographic-measurement of Gastric Residual Volume in Critically Ill Patients for Prediction of Gastric Tube Feed Intolerance: Views

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Received on: 14 September 2022; Accepted on: 16 September 2022; Published on: 31 December 2022

**Keywords:** Diarrhea, Feed intolerance, Gastric residual volume.

*Indian Journal of Critical Care Medicine* (2023); 10.5005/jp-journals-10071-24390

We read with immense interest the article titled “Serial Ultrasonographic-measurement of Gastric Residual Volume in Critically Ill patients for Prediction of Gastric Tube Feed Intolerance” by Rewari et al.<sup>1</sup> We commend the authors for their research, but we would like to express our views about this.

Authors have used sonographic assessment of the antral cross-sectional area (CSA) to predict enteral feed intolerance (EFI) As per the American society for parenteral and enteral nutrition (ASPEN) – 2020 updates in the definition of feed intolerance, different components have been used to define EFI including gastric residual volume (GRV), vomiting, diarrhea, a combination of gastrointestinal (GI) symptoms, intra-abdominal pressure and the amount of energy administered by EN. Even though a uniform definition is lacking, the pragmatic definition used by a clinician cannot be applied for research purposes when trying to study the prevalence, association with outcome, and the effect of interventions targeting EFI as mentioned.<sup>2</sup> A clear-cut definition for diagnosing EFI was not used by the authors. Enteral feed intolerance can occur at various levels in the GI tract such as gastroparesis, small bowel, and large bowel. One of the important clinical features of the small bowel and large bowel EFI is diarrhea which was not mentioned in the clinical features taken into account by the authors. Antral CSA which is a surrogate for GRV was used by the authors to predict EFI as there was a good correlation noted from the previous studies.<sup>3</sup> Gastric residual volume is a good predictor of EFI proximal to the antrum, that is, gastroparesis but not distal to the antrum. Hypo- or hyper-motility throughout the GI tract should be considered while defining EFI. Findings such as dilated bowel loops, bowel wall thickness, and peristalsis can be seen radiologically.<sup>2</sup> Hence, using CSA alone to predict EFI would not include all forms of EFI. Normal gastric emptying time is about 1.5–2 hours and is lesser for liquids. As per American Neurogastroenterology and Motility Society, assessment of gastric emptying by scintigraphy following a standard meal is done at 0 minute, 1, 2, 3, and 4 hours.<sup>4</sup> In critically ill patients, gastric emptying is affected by various factors such as stress, drugs, electrolytes, fluid overload, etc. In their study, the authors have used the continuous infusion of liquid feeds for 16 hours followed by an 8-hour feed-free period and GRV is measured at 0, 1, 2, 3, and 4 hours. There is a good probability of development of EFI later than 4 hours. Another measurement at the end of feeding could have been done as done in the previous studies<sup>3</sup> and compared with GRV4.

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**How to cite this article:** Pratyusha K, Jindal A. Serial Ultrasonographic-measurement of Gastric Residual Volume in Critically Ill Patients for Prediction of Gastric Tube Feed Intolerance: Views. *Indian J Crit Care Med* 2023;27(1):79.

**Source of support:** Nil

**Conflict of interest:** None

We would like to congratulate the authors for this study and also suggest taking into consideration the above-mentioned aspects while planning further studies.

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