EDITORIAL

Synergizing Survival: Uniting Acute Gastrointestinal Injury Grade and Disease Severity Scores in Critical Care Prognostication

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In the complex landscape of critical care medicine, the quest for reliable prognostic tools continues to be a paramount concern. As intensivists, the guardians of the critically ill, navigate a landscape fraught with uncertainty, the need for accurate risk stratification and outcome prediction remains a cornerstone of effective clinical decision-making. Amidst this backdrop, the emergence of the Acute Gastrointestinal Injury (AGI) grade represents a promising stride forward in prognostication, offering a nuanced lens through which to assess gastrointestinal dysfunction and its implications for patient outcomes.[1]

The AGI grade, originally proposed by the European Society of Intensive Care Medicine (ESICM) Working Group on Abdominal Problems, has garnered attention for its ability to assess gastrointestinal dysfunction in critically ill patients comprehensively.[1] This scoring system encompasses a spectrum of gastrointestinal insults, including bowel obstruction, gastrointestinal bleeding, pancreatic injury, and hepatic dysfunction, among others. By integrating clinical, laboratory, and imaging parameters, the AGI grade provides a holistic framework for evaluating gastrointestinal injury severity and predicting patient outcomes.

One of the key strengths of the AGI grade lies in its versatility and applicability across diverse patient populations. Whether managing patients in the intensive care unit (ICU) following major surgery, septic shock, trauma, or multiorgan failure, the AGI grade offers a standardized approach to assessing gastrointestinal dysfunction and stratifying risk. This standardized assessment facilitates communication among healthcare teams, promotes early recognition of complications, and guides targeted interventions to optimize patient care.

Furthermore, the prognostic value of the AGI grade extends beyond its ability to predict mortality. Studies have demonstrated its utility in forecasting the development of infectious complications, organ failure, prolonged ICU stays, and other adverse outcomes.[2,3] This prognostic insight empowers clinicians to tailor therapeutic strategies, such as early enteral nutrition, stress ulcer prophylaxis, and close monitoring for gastrointestinal complications, based on individual patient risk profiles.

Despite its promising attributes, the AGI grade is not without limitations and challenges. Variability in scoring interpretations, the need for ongoing validation and refinement, and the potential influence of confounding factors underscore the importance of cautious interpretation and integration with clinical judgment.[4,5] Additionally, the dynamic nature of gastrointestinal dysfunction in critically ill patients necessitates regular reassessment and adjustment of prognostic assessments based on evolving clinical scenarios.

A novel Gastrointestinal Dysfunction Score (GIDS) has been devised, building upon the rationale of the previously established AGI grading system.[4] The GIDS employs a structured composition of symptoms rather than relying on a broad subjective assessment in AGI grading. Additionally, it takes into account intra-abdominal pressure (IAP) and gastric residual volume (GRV). Biomarkers such as the plasma citrulline and Intestinal Fatty Acid-binding Protein (I-FABP) have been investigated as predictors of AGI.[6]

Disease severity scores, encompassing a diverse array of scoring systems and indices, serve as indispensable tools for risk stratification, prognostication, and therapeutic decision-making in critical care settings. One of the hallmarks of disease severity scores is their versatility and applicability across various critical illnesses and patient populations. The Acute Physiology and Chronic Health Evaluation II (APACHE II) score, Sequential Organ Failure Assessment (SOFA) score, and Simplified Acute Physiology Score II (SAPS II) are among the commonly used tools that integrate clinical, laboratory, and physiological parameters to estimate disease severity and prognosis.[7] However, applying these scores specifically to AGI cases requires careful consideration of gastrointestinal-specific variables and their impact on outcomes.

While mortality remains a crucial endpoint for assessing disease severity and treatment efficacy, predicting survival in patients with AGI is fraught with challenges.[1] One of the key challenges in mortality prediction for AGI lies in the dynamic

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nature of gastrointestinal dysfunction and its interplay with systemic inflammation, organ failure, and treatment responses. Gastrointestinal injuries can manifest acutely or evolve over time, necessitating ongoing assessment and adaptation of prognostic models. Additionally, the heterogeneity of AGI etiologies, ranging from ischemic insults to postoperative complications, further complicates mortality prediction and risk stratification.

To circumvent the challenges faced with AGI grade and disease severity scores independently, Pham Dang Hai et al. study published in this edition of IJCCM investigates the performance of the AGI grade in conjunction with disease severity scores for predicting mortality in critically ill patients.[8] A retrospective cross-sectional study was conducted in the ICU from May 2021 to December 2021, collecting demographic and clinical data. The results showed that AGI was observed in 47.3% of cases, and the in-hospital mortality rate was 30.1%. The performance of AGI grade, SOFA, APACHE II, and mNUTRIC score in predicting in-hospital mortality of critically ill patients was assessed with ROC curves. The AUC for AGI was 0.67, similar to the AUC of SOFA, APACHE II, and mNUTRIC score. When combining AGI with mNUTRIC score, the AUC for predicting in-hospital mortality significantly increased compared to AGI alone. Similarly, combining AGI grade with the APACHE II or SOFA scores also resulted in higher AUC values than AGI grade alone.

Although previous studies have examined the role of the AGI grade in mortality prediction in critically ill patients, this study by Pham Dang Hai et al is novel as it combines AGI grade with established disease severity scores.[2,3,9] The substantial improvement in the ability to predict in-hospital mortality by combining these scores only strengthens the importance of the research. The retrospective nature of the study is the primary limitation. Retrospective studies are subject to several pitfalls and biases that warrant careful consideration and interpretation.

In conclusion, by harnessing the synergy of AGI grading with traditional disease severity scoring systems and emerging biomarkers like plasma citrulline, intensivists can strive towards more accurate, personalized, and proactive prognostication, ultimately improving outcomes and quality of care for patients facing the complexities of AGI in the critical care setting. Looking ahead, collaborative efforts among clinicians, researchers, and healthcare organizations are essential to further elucidating prospectively the prognostic value of the AGI grade, addressing its limitations, and integrating it into evidence-based practice guidelines.

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