Laboratory biomarkers in the diagnosis, management, and prognosis of gastrointestinal disorders

Numerous blood and stool biomarkers are currently available which can be used for the diagnosis, prognosis, management, and follow-up for response to therapy in the gastrointestinal (GI) disorders. Study of laboratory biomarkers in the GI diseases is a fascinating topic for in-depth research and review. Therefore, the search for novel, more accurate, faster and affordable biomarkers in the GI diseases still continues because of numerous clinical recommendations and conflicting information in the literature today.

There are numerous questions in this field which still need a perfect answer such as: How to interpret fecal immunochemical tests for hemoglobin as a screening test in asymptomatic and assessment in the symptomatic patient? What is the utility of fecal calprotectin in inflammatory bowel diseases (IBD)? What is the best test for Clostridium difficile diagnosis? Can we avoid liver biopsy in patients with autoimmune hepatitis (AIH) when evaluating for liver fibrosis? In this focused issue, the authors have each been selected and tasked with tackling difficult questions that the healthcare and laboratory professionals encounter in their daily practice. We have chosen a broad array of national and internationally prominent researchers in the field of gastroenterology to delve into some of these topics, with the goal of understanding when and how to apply the available data in the clinical arena.

In the first article, Dr. Callum Fraser discussed the role of fecal immunochemical tests for hemoglobin (FIT) are used in asymptomatic colorectal cancer screening and in the assessment of patients presenting with lower GI symptoms. It was concluded that quantitative FIT is advantageous than qualitative FIT, but a universally accepted standardization of fecal hemoglobin concentration should be made (1). In the second article, Drs. McMahon and Chhabra provided the overview of the role of fecal calprotectin in the investigation of digestive disorders including IBD. They suggested that the patients with fecal calprotectin level >50 g/g should be managed aggressively with early endoscopy as these patients have a higher degree of intestinal inflammation. They also discussed the other conditions which could affect the level of fecal calprotectin such as cirrhosis and use of NSAIDs so that the clinician could use this biomarker in appropriate settings (2).

In another article, Dr. Kendrick provided an insightful commentary about the currently available tests for diagnosis of Clostridium difficile infection (CDI) while keeping Infectious Disease Society of America and American College of Gastroenterology guidelines in view. She also briefly discussed about the futuristic metabolomic analysis of stool and urine for diagnosis of CDI (3). In the next article, Gungoren *et al.* examined the diagnosis accuracy of enhanced liver fibrosis (ELF) test as compared to liver biopsy in AIH patients (4). In their prospective study, they found that ELF score can discriminate between no-mild and severe fibrosis, thereby reducing the need for invasive liver biopsy.

In my viewpoint, these articles will provide a clear and comprehensive overview of the use of serum and urine biomarkers in GI disorder's diagnosis, management and prognosis, and the challenges we face when approaching these patients in the real world.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Journal of Laboratory and Precision Medicine* for the series "Role of biomarkers in gastrointestinal disorders". The article did not undergo external peer review.

Conflicts of Interest: The author has completed the ICMJE uniform disclosure form (available at http://dx.doi.org/10.21037/jlpm.2018.03.11). The series "Role of biomarkers in gastrointestinal disorders" was commissioned by the editorial office without any funding or sponsorship. Hemant Goyal served as an unpaid Guest Editor of the series and serves as an unpaid

editorial board member of *Journal of Laboratory and Precision Medicine* from May 2017 to April 2019. The author has no other conflicts of interest to declare.

Ethical Statement: The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Received: 23 March 2018; Accepted: 03 April 2018; Published: 04 April 2018.
doi: 10.21037/jlpm.2018.03.11
View this article at: http://dx.doi.org/10.21037/jlpm.2018.03.11

doi: 10.21037/jlpm.2018.03.11
Cite this article as: Goyal H. Laboratory biomarkers in the diagnosis, management, and prognosis of gastrointestinal disorders. J Lab Precis Med 2018;3:32.