

The emerging era of artificial intelligence and its role in Gastroenterology

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Editorial

Artificial intelligence (AI) is evolving into various aspects of our lives, and its influence and utility are also emerging in medicine. AI has the potential to save healthcare costs, increase diagnostic accuracy, predict the prognosis of certain conditions, help with treatment planning, and potentially fill the gap of healthcare personnel shortage. However, it also has the dangers of poor regulation, lack of accountability, misuse, and subsequent risks associated with direct involvement in patient care, and the cost of replacing human jobs. We are currently in an exciting and, at the same time, anxious era due to the enormous potential of AI.

AI in gastroenterology has already shown the potential of broad applicability in several aspects of the field, including early diagnosis, increasing diagnostic accuracy and risk stratification, treatment planning, outcome, and prognosis prediction of various malignant and nonmalignant gastrointestinal (GI) conditions. Some of the exciting AI applications in gastroenterology include the field of ultrasound and upper endoscopy to improve diagnostic yield,^{1,2} early detection of cancerous lesions,³⁻⁴ management of gastroesophageal reflux disease (GERD)[5], Helicobacter Pylori diagnosis^{6,7} early risk stratification in bleeding patients,⁸ management of inflammatory bowel disease^{9,10} early detection of high-risk patients with probability to develop severe pancreatitis after admission¹¹ diagnosis of chronic atrophic gastritis,^{12,13} early detection of Barrett's esophagus¹⁴ classification and differentiation of cystic lesions of the pancreas,¹⁵ treatment and prognostication of certain cancers and post bariatric surgery prediction of GERD.¹⁶

Despite these advancements, significant challenges remain. These include the need for supervised, regulated extensive studies to assess the safety and potential roadblocks in implementation, cost of implementation, ethical and legal challenges. Further research is needed to determine AI's wide-scale applicability in gastroenterology and ensure its responsible integration into patient care.

Conclusion

AI has the potential to revolutionize the field of gastroenterology. Still, addressing the challenges and risks associated with its implementation is crucial to ensure its safe and effective use. AI can improve patient care and outcomes in gastroenterology and beyond through continued research and more importantly responsible integration.

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Conflicts of interest

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