

The role of artificial intelligence in gastroenterology: current perspectives and future directions—narrative review

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Background and Objective: Artificial intelligence (AI) has revolutionized the field of gastroenterology, leading to significant improvements in the diagnosis, management, and prognosis of several gastrointestinal (GI) disorders. With this context in mind, this brief review examines a wide range of subjects, including the history of AI in medicine and the state of AI in gastroenterology today, with a particular emphasis on its application in radiographic diagnosis, endoscopic procedures, disease detection, and clinical decision-making.

Methods: A narrative review of the literature was conducted, encompassing studies published in English across major databases. The review covers historical developments of AI in medicine, contemporary AI applications in gastroenterology, and emerging trends.

Key Content and Findings: AI techniques, including machine learning and deep learning, have demonstrated high accuracy in detecting GI pathologies such as polyps, neoplasms, inflammatory bowel disease, and other conditions. AI applications in endoscopy, video capsule endoscopy, and colonoscopy enable rapid analysis of large datasets, aiding early diagnosis and clinical decision-making. Challenges identified include data quality, model interpretability, ethical concerns, and liability associated with AI-assisted clinical decisions. Despite these challenges, AI continues to enhance gastroenterology practice and shows promise for broader clinical adoption.

Conclusions: AI has significant potential to improve patient care in gastroenterology. Future advancements will require collaboration among AI developers, clinicians, and patients to address implementation barriers, optimize clinical utility, and inform policy and research directions.

Keywords: Artificial intelligence (AI); gastroenterology; machine learning (ML); deep learning; AI in diagnostics

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Introduction

Overview of artificial intelligence (AI) in medicine

AI has drastically changed healthcare provision, advancing all care components, including diagnosis and management. AI technologies such as machine learning (ML) and natural language processing (NLP) play a vital role in healthcare and facilitate improving patient outcomes.

ML results in algorithms that computers can use to train from various datasets and generate predictions. In the domain of healthcare, ML is used for predictive analytics, where patterns in patient data can be used to predict clinical outcomes and, eventually, suggest appropriate, timely interventions as treatment. As an example, ML algorithms can predict disease outbreaks and resulting patient readmissions, which can help in implementing early preventative care and effective resource allocation; this can make all the difference in global pandemics like coronavirus disease 2019 (COVID-19) (1).

NLP involves the interaction of the lexicon between humans and computers. This can result in transforming unstructured clinical data like electronic health records (EHRs) into something more definitive and used as a practical data point. NLP can be used for improving clinical decision-making, categorizing administrative tasks, and refining patient care (2).

Another AI technology, computer vision, trains computers to interpret visual data, significantly assisting with medical imaging interpretation. Computer vision algorithms enable precise detection of abnormalities in X-rays, computed tomography (CT), and magnetic resonance imaging (MRI) scans, thereby facilitating timely clinical diagnosis (3).

Importance of AI in gastroenterology

Whilst the use of AI has been documented in specific gastrointestinal (GI) procedures such as endoscopy (4), the literature is still evolving with the advent of new technology in this domain. Elements such as ML for using AI models in gastroenterology are still in development. A recent meta-analysis compared the use of AI algorithms with endoscopy for diagnosing *H. Pylori* infection, with the goal of the analysis being to compare the diagnostic accuracy of AI in accurately diagnosing *H. Pylori* infection using endoscopic images. The study noted that AI had high sensitivity [0.93, 95% confidence interval (CI): 0.90–0.95], specificity (0.92, 95% CI: 0.89–0.94), and accuracy (0.92, 95% CI:

0.90–0.94) in detecting *H. pylori* infection using endoscopic images however, the meta-analysis noted the caveat of high heterogeneity amongst the literature which points to the nascency of literature in the field and potential for more research on the topic. While AI has made a significant impact in gastroenterology, concerns remain about legal liability, ethical implications, and whether physicians fully trust AI-driven decision-making (5). A summary is shown in *Figure 1*. We present this article in accordance with the Narrative Review reporting checklist (available at <https://tgh.amegroups.com/article/view/10.21037/tgh-25-10/rc>).

Methods

This review was conducted using a targeted literature search approach. We searched PubMed and Google Scholar for English-language articles published from January 2015 through January 2025, using combinations of keywords such as “artificial intelligence”, “machine learning”, “deep learning”, “gastroenterology”, “endoscopy”, “colon cancer”, “Barrett’s esophagus”, and “capsule endoscopy”. Priority was given to high-quality original research, meta-analyses, and consensus statements relevant to clinical practice. References were selected based on their relevance to current and emerging applications of AI in gastroenterology, with emphasis on studies demonstrating real-world utility, clinical outcomes, or regulatory significance (*Table 1*).

Objectives of the review

The current review is undertaken to synthesize evidence on the use of AI in gastroenterology and provide a current overview of the field. It covers a brief history of AI in medicine, applications in gastroenterology, challenges in the use of AI in gastroenterology, and future directions of the field.

From past to present, a brief history of AI in medicine

Evolution of AI technology

The foundations of AI can be traced to the advent of the “Turing Test”, which investigated whether machines could recreate human decision-making. This concept was further advanced at the 1956 Dartmouth Conference, where prominent scientists and engineers laid the foundation for AI’s practical applications (6).

The application of AI in medicine began to thrive in

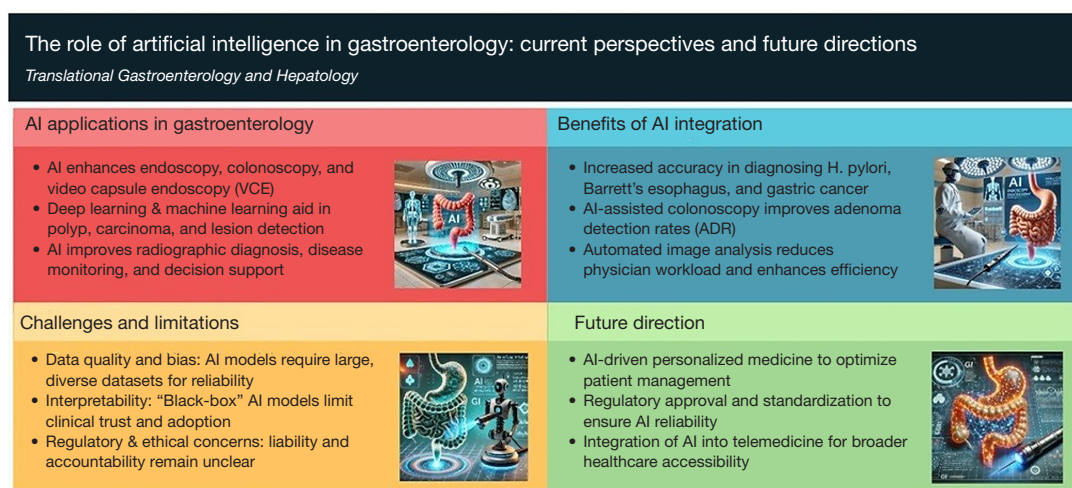


Figure 1 Summary of role of artificial intelligence in gastroenterology. AI, artificial intelligence.

Table 1 Search strategy summary

Items	Specification
Date of search	12 January 2025
Databases and other sources searched	PubMed, Google Scholar
Search terms used	"Artificial intelligence" OR "machine learning" OR "deep learning" OR "gastroenterology" OR "endoscopy" OR "colon cancer" OR "Barrett's esophagus" OR "capsule endoscopy"
Timeframe	January 2015 to January 2025
Inclusion and exclusion criteria	Inclusion: original research, reviews, and meta-analyses on AI in gastroenterology; English language; human studies Exclusion: conference abstracts without full text, non-English publications, animal studies
Selection process	Two independent reviewers (M.K.G. and F.P.) screened titles and abstracts. Full-text review was conducted for potentially relevant studies. Discrepancies were resolved by the third author (O.I.)

AI, artificial intelligence.

the 1970s. INTERNIST-1, an early medical diagnostic AI, was developed in 1971, followed by MYCIN, which helped prescribe antibiotics based on input criteria. DXplain, introduced in the 1980s, further supported medical diagnosis by expanding the range of conditions it could diagnose (7,8).

The modern era of AI started in the early 2000s, with IBM's Watson demonstrating AI's capabilities by winning on *Jeopardy!* Later, AI was applied to healthcare for intricate tasks like identifying RNA-binding proteins associated with diseases. In 2015, Pharmbot was developed to educate patients about medications, illustrating the growing role of AI in healthcare (9).

Significance of AI in gastroenterology

AI's impact on gastroenterology is significant, particularly in increasing diagnostic accuracy. For example, a study from New Zealand compared conventional and AI-assisted colonoscopy and found the latter improved the adenoma detection rate (ADR), demonstrating the efficacy of AI (10).

Further developments occurred at the first global AI in "Gastroenterology and Endoscopy Summit" in 2019. At the forum, experts worldwide had accurately predicted that AI would significantly augment patient care and stratify and improve clinical workflows with time. The forum also noted that the successful development and

Table 2 Summary of key publications on the evolution of AI in the field of gastroenterology focusing on its use in detecting polyps, adenomas, BE, and malignancies

Authors	Year	Study focus	AI methodology	Key findings	Clinical application
Byrne <i>et al.</i> (12)	2019	Polyp detection in colonoscopy	DCNN	ACC and sensitivity for polyp characterization of 94% and 98%, respectively	Real-time diagnostic aid
Lagström <i>et al.</i> (13)	2025	ADR improvement	ML	Using AI assistance (GI Genius, Medtronic Co., Minneapolis, MN, USA), the adenoma detection rate was 59.1%, compared to 46.6% with conventional colonoscopy (P<0.001)	Enhancing colonoscopy accuracy
Mori <i>et al.</i> (14)	2021	AI in endocytoscopy for early cancer detection	Deep neural networks	Overall ACC of 91.9%. Sensitivity and specificity for differentiating cancer were 91.8% and 97.3%	Diagnostic support for early GI cancers
Aoki <i>et al.</i> (15)	2021	Capsule endoscopy lesion detection	DCNN	Detection rate of the DCNN for abnormalities per patient was 99%	Automating capsule image analysis
Tsai <i>et al.</i> (16)	2023	AI for BE	Real-time AI assistance and DCNN	AI system correctly identified 66 of 70 cases of BE and 85 of 90 cases without BE, resulting in an ACC of 94.37%	Predicting endoscopic images of histological BE

ACC, accuracy; ADR, adenoma detection rate; AI, artificial intelligence; BE, Barrett's esophagus; DCNN, deep convolutional neural network; GI, gastrointestinal; ML, machine learning.

implementation of new technologies in a clinical setting would require a multidisciplinary approach with the input of gastroenterologists, industry leaders, and regulatory bodies to ensure success (11). *Table 2* summarizes key publications on the evolution of AI in the field of gastroenterology.

Applications in gastroenterology

AI in disease detection and monitoring

The advent of AI has resulted in improved diagnostic accuracy in gastroenterology. GI endoscopic procedures have noted better outcomes when AI algorithms are incorporated to analyze images and videos. The American Society for Gastrointestinal Endoscopy (ASGE) AI Task Force has highlighted how AI can improve lesion detection and characterization in real time, aiding in both diagnostic and therapeutic interventions (17).

AI can help by providing real-time analyses of endoscopic images, which can assist gastroenterologists in noting pathological areas on the initial assessment that could be missed due to human oversight or procedure fatigue. AI-powered systems are increasingly used to automate documentation and streamline workflow, reducing physician workload and enhancing efficiency. Additionally, AI-driven risk prediction models have also been introduced as a way to tailor surveillance strategies and improve patient management. The idea is to move away from a one-size-

fits-all approach and instead use AI to assess individual risk factors, helping doctors make more informed, personalized decisions (17).

The literature corroborates the use of AI in improving ADR. As an example, a randomized controlled trial (RCT) demonstrated a statistically significant increase in adenoma detection when AI was used during colonoscopies (18). Likewise, another multi-center randomized control trial reported that an AI-assisted colonoscopy not only significantly improved ADR detection rates but also noted an increase in the detection of smaller adenomas of 5 mm or smaller (19). Finally, the work by Glissen Brown *et al.* demonstrates that deep learning AI systems could help reduce the adenoma miss-rate in multi-center studies (20).

AI-driven predictive models that analyze EHRs have shown potential in identifying patients at higher risk for esophageal cancer. By sifting through vast amounts of patient data, these models can help doctors catch warning signs earlier and tailor screening strategies more effectively (17). A recently published paper by Iyer *et al.* (21) looked at an AI model developed from the deidentified patient data of EHRs database of 6 million Mayo Clinic patients and noted that the predictive model created from the ensemble transformer-based ML model architecture had better accuracy than conventional risk-based scores for predicting the risk of Barrett's esophagus (BE) and esophageal cancer, which could help in implementing effective minimally invasive screening technology looking at specific risk

factors.

Apart from esophageal diseases, AI has also displayed its effectiveness in detecting early-stage gastric cancer (GC) in the setting of gastric precancerous lesions and *H. pylori* infections, enabling early lesion identification and offering tailored approaches. The diagnostic superiority of AI over human endoscopists has been illustrated in a recent paper (22). Likewise, a meta-analysis (23) recently confirmed AI's effectiveness in distinguishing non-infected from post-eradication gastric mucosa. In this regard, BE is another example where AI has led to a paradigm shift. Since 2016, convoluted neural networks have begun outperforming traditional analytical approaches of diagnosing the disease, achieving sensitivities of approximately 94% and specificities of 88% on benchmark endoscopic image repositories (24). This was further demonstrated in a study by Hussein *et al.* from Europe (25) used a convoluted neural network to achieve a per-image sensitivity of 91%, specificity 79% and an area under the receiver operator curve of 93% to detect dysplasia. These developments have not only enhanced dysplasia detection rates and reduced interobserver variability but also paved the way for fully integrated AI assistants in the endoscopy suite.

Several AI models that can diagnose liver disease have been reported. It can be used for predicting the appearance of hepatocellular carcinoma (HCC) in patients with cirrhosis. The accuracy of the AI model based on the decision tree and random forest algorithms using time series data surpassed that of conventional regression analysis (26).

It has been shown that some AI models can aid inexperienced radiologists in enhancing their performance. However, there are some limitations currently present. The performance of the AI model is dependent on the quality and quantity of the data that is being used to train it. Thus, physicians must be careful and not fully rely on the results provided by the AI model.

A non-invasive deep learning model, which is based on contrast-enhanced ultrasound to detect vessels encapsulating tumor clusters (VETC) in HCC, has also been developed. The study showed that the deep learning model is a non-invasive and practical method to detect VETC-HCC (27).

AI-based image classification models, such as convolutional neural networks (CNNs), have achieved high sensitivity in classifying endoscopic images for GC detection (28). In February 2020, Saito *et al.* (29) developed a CNN using a large dataset of 30,584 images of protruding small intestine lesions. The model not only detected lesions but also classified them into polyps, nodules, epithelial tumors,

submucosal tumors, and venous structures, with respective sensitivities of 86.5%, 92.0%, 95.8%, 77.0%, and 94.4%. This was one of the first studies to train a single model on multiple lesion types, bringing AI applications closer to real-world clinical settings where diverse pathologies often coexist and require accurate differentiation. The GI AI diagnostic system (GRAIDS) performs comparably to expert endoscopists, particularly benefiting trainees and low-volume hospitals (30). GC detection in whole slide imaging has improved via advanced models like GastricNet and recalibrated multi-instance deep learning (RMDL) (12,31).

AI-assisted computer vision applications like computer-aided detection (CAdE) and computer-aided diagnosis (CAdx) are critical in preventing colorectal cancer (CRC). These systems significantly improve polyp detection rates, addressing adenoma miss rates ranging from 6% to 28%. A systematic review and meta-analysis by Hassan *et al.* showed that CAdE usage during colonoscopy increased ADRs, accompanied by a reduction in miss rates (32). The ADR was 44.0% as compared to the standard colonoscopy group at 35.9%. The rate of removal of nonneoplastic polyps in the CAdE group was 0.52 as compared to 0.34 in the standard group. CAdE tools have also increased ADRs in colonoscopy, while CAdx systems support polyp characterization, potentially reducing unnecessary biopsies (17).

Multiple RCTs assessing accuracy of AI tools in ADR detection have reported significant results; however, literature also shows conflicting evidence from the real-world has emerged, reporting no additional benefit of using AI tools. A Large Pragmatic Multicenter Randomized Study (33) in patients older than 50 years with mixed colonoscopy indications, observed that CAdE did not increase the ADR ($P>0.05$), with no differences observed in adenomas per colonoscopy or any of the adenoma subgroups with regard to size, morphology, location, and histology, as well as colonoscopy indication. Furthermore, a systematic review reported no difference in ADR between with CAdE and without CAdE [relative risk (RR) 1.04, 95% CI: 0.88–1.23, $P=0.65$] in at least 5 retrospective studies. This raises questions on whether the results of CAdE RCTs are reproducible in the real world (34).

AI-assisted endoscopy has shown favorable results in the diagnosis and management of inflammatory bowel disease (IBD). Integration with video capsule endoscopy (VCE) for investigating uncertain hemorrhagic lesions has displayed high sensitivity and accuracy in detecting IBD-associated lesions, representing significant advancements

Table 3 Gastroenterology relevant AI tools which are commercially available, have regulatory approval (e.g., FDA, CE mark) and also currently in process of obtaining regulatory approval

Tool	Primary function	Approval status
GI Genius™ (Medtronic)	Real-time CAdE of polyps during colonoscopy	FDA De Novo, CE Mark
ENDO-AID CAdE (Olympus)	Real-time polyp detection with Olympus EVIS X1 system	CE Mark, FDA 510(k)
Wision AI (EndoScreener)	AI-assisted real-time polyp detection during colonoscopy	CE-MDR, No FDA clearance
MAGENTIQ-COLO™ (Magentiq Eye)	CAdE with advanced features (e.g., polyp size, maturity)	FDA 510(k), CE Mark, Israel AMAR
CAD EYE (Fujifilm)	CAdE + CAdx system for polyp detection and characterization (via Blue Light Imaging)	FDA 510(k), CE Mark
VirtaMed GI Simulators	High-fidelity virtual reality simulators for GI endoscopy training	Educational device (no FDA/CE required) Used globally for simulation-based training
SKOUT® system (Iterative Scopes, Inc.)	AI-assisted real-time polyp detection during colonoscopy	FDA 510(k)
Ultivision AI (Iterative Scopes)	Real-time CAdE of polyps during colonoscopy	Expected to reach market soon (late-stage development or regulatory submission)
ENDOANGEL (Wuhan EndoAngel Medical Technology)	AI-assisted real-time polyp detection during colonoscopy	
Imagia Canexia Health	AI-enabled cancer genomics and clinical decision support	

AI, artificial intelligence; CAdE, computer-aided detection; CAdx, computer-aided diagnosis; CE, Conformité Européenne (European certification mark); FDA, Food and Drug Administration; GI, gastrointestinal; MDR, Medical Device Regulation.

in early detection and intervention (35,36). Furthermore, the integration of AI into capsule endoscopy has the ability to streamline small bowel evaluations, making them more efficient and accurate (5).

Expanding access to gastroenterology care with AI

AI can be vital in providing equitable access to gastroenterology care via telemedicine, especially in the underserved population. An example of this is AI-integrated telemedicine platforms, which facilitate virtual consultations by gastroenterologists, allowing patients to receive specialist care from the comfort of their residence (17,37). This can be revolutionary for patients located in remote areas and can significantly improve their quality of life.

AI serves as a valuable tool for gastroenterologists, relieving them from the arduous task of interpreting images from procedures like VCE. While VCE has revolutionized the field by enabling painless examination of the entire GI tract for occult GI bleeding, including areas inaccessible via conventional endoscopy (38), interpreting VCE images is time-consuming. AI significantly accelerates this process, as evidenced by over 31 studies reporting using various AI

models, including CNNs, for VCE image interpretation. A prior study demonstrated a rapid improvement in interpretation times and a remarkable sensitivity and specificity for detecting occult GI conditions (38). AI has the potential to make endoscopy suites run more smoothly by handling documentation automatically, cutting down on the administrative load for physicians, and optimizing workflow. This integration allows for improved data management, facilitates real-time decision-making, and ultimately enhances the quality and accessibility of GI care (17).

By providing access to high-quality care regardless of location, AI helps bridge healthcare disparities. Patients who might otherwise lack access to specialized care can receive expert evaluations and treatment recommendations, making healthcare resources more accessible and promoting more equitable healthcare delivery worldwide (37,39). One promise AI can offer is the idea of “Personalized Medicine”. It can be exemplified in two applicable scenarios. Firstly, AI, such as neural networks, can help physicians judiciously use invasive interventions. For example, if a PPI is beneficial before endoscopy, AI can identify individuals who would benefit from such an intervention. A summary of available or under regulatory review AI tools is shown in *Table 3*.

Challenges and limitations of AI in GI

Even though AI has the potential to revolutionize healthcare in GI, it is not fraught with challenges. Firstly, there is a major issue about liability arising from who is responsible for clinical outcomes arising from the use of AI, whether it is the AI creators or the physicians themselves (40). Currently, there is no legal precedent in place for such a scenario that occurs due to an incorrect outcome put forward by the AI (5,41). As a result, physicians may be hesitant to incorporate AI into their clinical practice, and software companies may be reluctant to innovate due to unclear legal precedents on liabilities. One possible solution would be ensuring a balance between too much AI oversight and regulation and too little of it. Standardized government guidelines and legal clarity are essential for ensuring responsible AI integration into GI practice (5). Concerns around data privacy, patient consent, and biases in AI models need to be addressed to build trust and ensure these technologies are implemented fairly. Without addressing these issues, the potential benefits of AI in healthcare could be overshadowed by skepticism and unintended disparities in care (42).

Secondly, another major challenge is the accuracy of the AI model, mainly when the AI depends on the training data quality (41). In this regard, when it comes to AI in healthcare, flaws in data collection and a lack of diversity in training samples can impact the accuracy of these models in real-world patient care. If the data isn't truly representative, the AI might miss important nuances, leading to less reliable or even biased outcomes (17). These necessitate ongoing refinement and validation. A potential solution is for the collection of data to be standardized and representative of the patient population. Physicians can be involved in the process to provide input to ensure the dataset provided for the AI model training is representative of the end patient population. The integration of AI in clinical medicine, therefore, raises significant ethical and legal concerns. Issues such as institutional approvals, patient consent, data ownership, and privacy rights are critical when handling sensitive health information. With weak implementation of an AI system supplemented with inconsistent data governance policies, there are potential risks of data breaches or misuse of sensitive information (43).

The third challenge can arise from resource limitations and the cost-effectiveness of the AI model itself. Even though AI has been prominent for decades, its incorporation in healthcare has been slow because of the inability to provide expected results (41). AI has generally

overpromised and underdelivered (41), and because of this, investigators tend to be hesitant to fund AI applications until they are sure of positive clinical outcomes. One potential solution to this problem could be using existing or pre-trained models that have demonstrable clinical efficacy, such as Computer-Aided Design (CAD) systems, instead of building new models from scratch, which could reduce costs in incorporating these AI tools in clinical practice.

Cybersecurity is a major challenge related to the use of AI. Cyberattacks can potentially breach patients' confidential data (44), which would result in a lack of trust in AI by physicians and the public. Another potential security issue that could be faced is access by an outside person into the AI software, which can result in malicious usage of the AI to give incorrect clinical diagnoses and treatment plans or even introduce incorrect parameters, resulting in a misdiagnosis. Such a scenario would gravely damage trust in AI, specifically the knowledge that AI can be manipulated (41).

The final challenge arises in the interpretability of the AI ML model. Interpretability exists as a spectrum ranging from "white-box" to "black-box" models. The workings of the "white-box" models are easy to understand and decipher, whereas the "black-box" models are challenging to comprehend and are used in complicated scenarios (41). The use of "black box" models poses various challenges, such as a physician being unable to give reasons for following the plan suggested by the AI to the patient. It also poses an ethical dilemma that physicians should have a basic understanding of the mechanisms behind how the AI tools they use to make clinical decisions work.

Future directions for AI in GI

Despite these challenges, the scope of AI in GI surgery is promising, and given the speed of advances in the field, it is important that some fundamental developments occur.

Firstly, when used in a medical domain, such as in procedures such as endoscopy, AI should be considered a medical device and hence needs oversight by bodies like the Food and Drug Administration (FDA) (45). It is essential to focus on developing standardized validation metrics and clear guidelines for integrating AI into everyday medical practice. Without these in place, effectively adopting AI solutions into routine care is going to be a challenge (17,42). Likewise, when using AI to make clinical decisions such as patient treatment plans, physicians should decide who is responsible for providing accurate data to the AI model

and who will be held responsible for the outcomes of AI-generated models (41,45). Likewise, in-depth randomized control trials are needed to demonstrate the real-world performance of such algorithms in diverse populations to eliminate any biases in the data models on which the AI is based (46). Lastly, there needs to be simplification in developing AI models so that physicians without expertise can develop AI models independently and accordingly use them in their practice. Education programs on AI literacy for gastroenterologists will be key to successful implementation and adoption (17,42).

AI can decrease physician workload and increase productivity by diverting them from time-consuming tasks to spending more time on ensuring accurate clinical decision-making. AI assistance can help in real-time clinical settings, such as during procedures. However, a larger team of physicians, data scientists, sub-specialty experts, and the pharmacological industry will also need to come together to further advance the field of AI in gastroenterology (46).

Advances in technology and AI are poised to significantly enhance healthcare by enabling more accurate diagnoses and personalized treatment. In cancer imaging, AI—particularly deep learning—has improved tumor detection, characterization, and response monitoring. Radiomics further offers rapid, non-invasive biomarkers for cancer diagnosis and prognosis. In GI oncology, AI shows promise in evaluating subepithelial bowel tumors (SBTs), especially through capsule endoscopy, though limited data exist due to their rarity. Radiomics is also being explored for differentiating gastrointestinal stromal tumors (GISTs) from other neoplasms, risk stratification, and prognosis prediction. While AI applications in cancer imaging are not yet standardized, radiomics holds potential as a future “virtual biopsy” to guide SBT management (47).

The integration of advanced radiomic workflows with AI will transform noninvasive disease stratification and management of various GI conditions. Positron emission tomography (PET) and MRI-based radiomic workflows have demonstrated area under the curves (AUCs) as high as 0.98 for pathological complete response in esophageal and rectal cancers when combined with machine-learning classifiers such as least absolute shrinkage and selection operator (LASSO)-selected features feeding support vector machines or random forests (48). End-to-end deep-learning architectures—ranging from CNNs to emerging transformer models—are set to supplant handcrafted pipelines by learning task-specific representations directly from digital imaging and communications in medicine

(DICOM) inputs and by leveraging self-supervised pretraining on large unlabeled GI imaging cohorts, which will demonstrate impact on patient outcomes.

Conclusions

Artificial intelligence’s future in gastroenterology is auspicious, and AI can facilitate many aspects of the field, such as detecting GI cancers early on endoscopic images or providing a personalized treatment plan to patients via specific inputs of clinical variables. Even though AI has not advanced enough to remove the elements of human interaction or clinical reasoning, it can genuinely improve patient care and outcomes. Ultimately, the goal should be to develop AI-assisted personalized patient care instead of AI-driven management.

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Footnote

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