

RESEARCH LETTER

Patient Perspective of Use of Artificial Intelligence During Colonoscopy



The use of artificial intelligence (AI) in screening colonoscopies has been shown to improve adenoma detection rate (ADR), increase the number of adenomas detected per colonoscopy, and decrease the number of missed adenomas.¹⁻⁴ Outside of the average risk population, AI may have less benefit.⁵ Modeling of widespread use of AI in screening colonoscopies is estimated to have significant reductions in colorectal cancer incidence and health-care expenditure.⁶ There is limited information on patient preferences regarding the use of AI during colonoscopy. We sought to better understand patients' familiarity with AI, perception of AI use in colonoscopy, and how AI use in colonoscopy ranked among other factors when choosing a colonoscopist.

All patients presenting for colonoscopy for any indication were invited to complete a written survey presented in English, in the preprocedural area. The primary outcomes were to evaluate patient familiarity with AI, their perceptions of AI use during colonoscopy and which factors were most important in choosing a colonoscopist. Individuals completed the survey independently with a research team member available for any questions. Patients were asked to answer close-ended "yes-no" questions, a 5-point Likert scale on the importance of AI use during colonoscopy, and rank the top 3 reasons for choosing a colonoscopist from a list of options including cost, reporting of performance measures, ease of scheduling, use of AI, recommendation of primary care provider, and experience of colonoscopist.

A total of 112 patients completed the survey. The average age of

respondents was 58.3 years (20–82 years). Forty-six point four percent were female. The majority (76.8%) had a prior colonoscopy. One-third (33.1%) of patients researched their colonoscopist on the internet before their procedure. Two-thirds of patients (66.1%) chose their colonoscopist based on the recommendation of their primary provider.

Approximately one-third (34.8%) reported a prior encounter with AI in daily life and 44.6% reported hearing of AI use in medicine. When asked about the importance of AI in colonoscopy, 58.0% reported use of AI to be very or somewhat important, with only 9.8% reporting AI to be somewhat not important or not important at all. 65.2% reported they would "choose a colonoscopist who uses AI with computer-aided polyp detection during colonoscopy over one who does not." While only 12.5% reported having previously heard of ADR, once provided with the definition, 80.4% reported she or he would choose a colonoscopist who reported ADR over one who did not.

Responses to ranked choices for choosing a colonoscopist are presented in Table. Experience of the colonoscopist was the most important factor (54.1% ranking as most important and within top 3 choices in 93.5%), followed by recommendation from another provider (33.3% top choice, 81.4% within the top 3 choices) and reporting of performance measures (60.3% within the top 3 factors). Use of

AI was within the top 3 reasons for 27.1%; however, it was not ranked as the most important in choosing a colonoscopist by any respondents. Cost was the least important factor with only 7.6% selecting cost as 1 of the top 3 reasons.

We examined how 4 subgroups differed in their responses, specifically with how they ranked AI as important for colonoscopy and chose AI as a factor for selecting a colonoscopist. The subgroups were based on gender, prior familiarity of AI, age below 45 years, and prior colonoscopy experience. None of the subgroups had statistically significant differences in the association between ranking and choosing AI. However, we observed some trends within the subgroups. Participants who were familiar with AI compared to those unfamiliar with AI, ranked AI lower in importance for colonoscopy (25.6% vs 27.4), but higher as a factor for selecting a colonoscopist (61.5% vs 56.2%). Similarly, individuals with a prior colonoscopy also ranked AI lower in importance (25.6% vs 30.85%), but higher as a factor for selecting a colonoscopist (60.5% vs 50.0%). Conversely, male participants and participants below 45 years of age ranked AI higher in importance (31.7% vs 21.2% and 40.0% vs 26.5%, respectively) and higher as a factor for selecting a colonoscopist (65.0% vs 50.0% and 64.3% vs 57.1%, respectively).

Results from our survey indicate that there is strong interest in AI among patients undergoing colonoscopy with utilization during the

Table. Top Choices When Choosing a Colonoscopist

	Choice #1	Choice #2	Choice #3	Within top 3
Cost	2.70%	0.95%	4.00%	7.66%
Reporting of performance	6.31%	20.00%	34.00%	60.31%
Ease of scheduling	3.60%	6.67%	17.00%	27.27%
Use of AI	0.00%	2.86%	27.00%	29.86%
Recommendation of PCP	33.33%	39.05%	9.00%	81.38%
Experience of colonoscopist	54.05%	30.48%	9.00%	93.53%

PCP, primary care provider.

procedure felt to be important. A recent Dutch survey found that nearly 2 out of 3 patients undergoing any endoscopy and 4 out of 5 gastroenterologists believed AI could improve the quality of care.⁷ While there is enthusiasm for AI potential benefit in endoscopy and acceptance from patient to have AI incorporated in their care, we found other factors were ranked to be more important when selecting a colonoscopist, including colonoscopist experience, primary provider recommendation and reporting of performance measures. Even though when directly asked, a majority of respondents stated they would choose a colonoscopist who uses AI over one that does not, more traditional and familiar indicators of colonoscopist competency are currently more highly valued. Additional studies to evaluate patient perception of AI systems used during colonoscopy and methods to communicate colonoscopy quality measures and the influence of AI are warranted.

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Abbreviations used in this paper: ADR, adenoma detection rate; AI, artificial intelligence

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This project was submitted to Yale School of Medicine Internal Review Board #2000030740. Because this anonymous survey was completed without any personal identifiable information recorded, this project was approved as an exemption from continuous review.

Data Transparency Statement:

Data, analytic methods, and study materials will be made available for other researchers upon request.

Reporting Guidelines:

Standards for Reporting Qualitative Research (SQUIRE).