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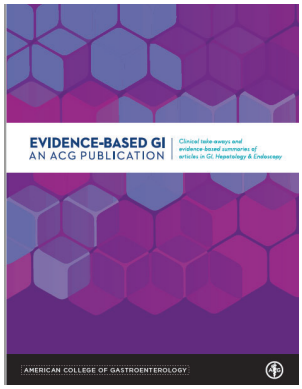

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Redefining Advanced Adenomas

Joseph C. Anderson, MD, FACG

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This summary reviews Anderson JC, Mackenzie TA, Butterly LF, Imperiale TF. Risk for metachronous advanced neoplasia in patients with a modified definition of advanced adenoma: Data grom the New Hampshire Colonoscopy Registry. Clin Gastroenterol Hepatol. 2026 Feb;24(2):535-543.e2.

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Keywords: Adenoma, colonoscopy, detection, colorectal cancer

CRC SCREENING

STRUCTURED ABSTRACT

Question: What is the risk of metachronous advanced neoplasia and colorectal cancer (CRC) in individuals with 10-19 mm tubular adenomas (TA) as compared to those with high-grade dysplasia (HGD), villous histology, and TAs ≥20 mm (modified AA)?

Design: Retrospective analysis of the New Hampshire Colonoscopy Registry.

Setting: Endoscopy sites in New Hampshire, United States.

Patients: The study included 35,941 individuals 40 years and older with an index colonoscopy and follow up colonoscopy 12 months or longer after the index exam. Individuals with index findings of CRC, poor bowel preparation, familial cancer syndromes, inflammatory bowel disease (IBD), or more than 10 adenomas were excluded.

Intervention/Exposure: Individuals were divided into 5 groups based on the most advanced index findings:

Group 1) No adenomas;
Group 2) 1-2 small (< 1 cm) tubular adenomas;
Group 3) 3-10 small (< 1 cm) tubular adenomas;
Group 4) 1 or more tubular adenomas 10-19 mm; and
Group 5) any adenoma > 20 mm or 1 with villous elements or high-grade dysplasia ("modified AA").

Outcome Measures: The 2 outcomes of interest were advanced neoplasia (AN) diagnosed at the first follow up colonoscopy and CRC diagnosed 6 months or longer after the index exam. AN was defined as a large (> 1 cm) adenoma, or any adenoma with 25% or greater villous elements or HGD and adenocarcinoma. The authors also examined AN with the modified definition of AA as an outcome.

Data Analysis: The primary outcome was metachronous AN diagnosed 12 months or longer after the index colonoscopy. The crude and adjusted risks for metachronous AN were calculated using a Poisson loglinear model that included covariates of patient age (continuous), sex, BMI (continuous), smoking (never (reference), past or current), presence of large sessile serrated polyps (SSPs) on index exam, months (natural logarithm of months used an offset variable) since index exam as well as year and indication of index colonoscopy and adenoma detection rate (ADR) of index endoscopist. To examine and compare the risk for large (10-19 mm) tubular adenomas versus the modified AA group, the Poisson model was performed with the large (10-19 mm) TA as the reference category.

The secondary outcome was CRC diagnosed 6 months or longer after the index colonoscopy. Adjusted hazard ratios were derived from Cox regression modelling CRC diagnosis based on index findings. This model included age (continuous), sex, smoking (never, past or current), presence of large SSPs, months (time variable) since index exam as well as year and indication of index colonoscopy, ADR of index endoscopist and whether there was more than 1 follow up colonoscopy. Similar to the model above for advanced neoplasia, the Cox regression was performed using the large (10-19 mm) tubular adenoma category as the reference group.

Funding: Division of Cancer Prevention, National Cancer Institute, 5R01CA243449, Optimizing colorectal cancer prevention: a multi-disciplinary, population-based investigation of serrated polyps using risk prediction and modeling.

Results: There were 35,941 adults stratified by index findings: *Group 1*) no adenomas (n=20,857); *Group 2*) 1-2 small(<1cm) TAs (n=9,927); *Group 3*) 3-10 small (<1cm) TAs (n=2,124); *Group 4*) TAs 10-19mm (n=1,492); *Group 5* modified AA group (n=1,541). These data are shown in **Table 1**. Compared to patients with 10-19 mm TAs, there was a trend toward a higher adjusted AN risk for patients with the modified AA (RR=1.28; confidence interval (CI), 0.99-1.66; P=0.065).

However, when using AN with the modified advanced adenoma definition as the outcome, the authors observed that the modified AA group had a statistically significantly higher risk for metachronous modified AA than the large (10-19mm) TA group (RR=1.52; CI,1.04-2.22). With respect to CRC, the study observed that as compared to the low-risk groups (1-3), those with 10-19 mm TAs (Hazard Ratio (HR)=2.44; 95% CI,1.34-4.44) and those with the modified AA's 5 (HR=3.52; CI,1.98-6.25) had higher HRs for CRC. While the point estimate was higher for those with modified AAs, the CIs overlapped. These data are shown in **Table 2**.

COMMENTARY

Why Is This Important?

The term "advanced adenoma" carries an ominous connotation, as it signifies a high risk for colorectal cancer (CRC), causing concern for both patients and clinicians. Evidence, including data from the New Hampshire Colonoscopy Registry, supports this concern by showing that individuals with advanced adenomas face a higher risk of future advanced neoplasia—defined as the combined risk of CRC and other advanced adenomas—compared to those with non-advanced or no polyps. However, it is possible that the varied components within this "advanced" category possess different levels of risk for future neoplasia. Data comparing the risk for patients with 10-19 mm tubular adenomas as compared to those with other advanced findings would be helpful in guiding surveillance recommendations. In this study the 10-19 mm group comprised approximately half of what would constitute the current definition of

Group	Adjusted Rate Ratio	95% CI Lower	95% CI Upper	*P*-value
Advanced neoplasia				
No adenomas (n=20,857)	0.27	0.22	0.34	< 0.001
Small 1-2 tubular adenomas (n=9,927)	0.41	0.33	0.50	< 0.001
Small 3 or more tubular adenomas (n=2,124)	0.64	0.50	0.83	< 0.001
Reference group (Large (10-19 mm) tubular (n=3,033)	1.0	---	---	< 0.001
Modified AA (n=1,541)	1.28	0.99	1.66	0.065
Advanced neoplasia outcome with modified definition of advanced adenomas				
No adenomas	0.29	0.21	0.40	<0.001
Small 1-2 tubular adenomas	0.41	0.30	0.56	<0.001
Small 3 or more tubular adenomas	0.47	0.31	0.71	<0.001
Reference group (Large (10-19 mm) tubular adenomas)	1.0	---	---	---
Modified AA	1.52	1.04	2.22	0.03

Table 1. Poisson model predicting advanced neoplasia at subsequent colonoscopy using 10-19 mm tubular adenomas as the reference groups.

No advanced neoplasia as reference			
	No advanced neoplasia	Large (10-19mm) TA	Modified AA
Hazard Ratio for PCCRC* (95% CI)	1.00 (Reference	2.44 (1.34-4.44)	3.52 (1.98-6.25)
Large (10-19mm) TA as reference			
Hazard Ratio for PCCRC* (95% CI)	0.41 (0.23-0.75)	1.00 (Reference)	1.44 (0.66-3.17)

Table 2. Adjusted risks for post colonoscopy CRC with no advanced neoplasia and large (10-19 mm) TA as reference groups.
*Cox regression of the hazard of post colonoscopy CRC based on index findings adjusted for patient age (continuous), sex, smoking (never, past or current), presence of large SSPs, months (time variable) since index exam as well as year and indication of index colonoscopy, ADR of index endoscopist and if there was more than 1 follow up colonoscopy.

AAs. These data suggest that this group would account for a large proportion of patients having a 3-year surveillance interval. A lower risk for patients with 10-19 mm polyps could suggest that a 5 year as opposed to a 3-year interval could be recommended, potentially decreasing the burden and risk associated with surveillance colonoscopies.

Key Study Findings

In summary, using the 10-19 mm tubular adenoma group as the reference group, the study observed that the modified AA group demonstrated a trend toward increased risk for metachronous advanced neoplasia. Furthermore, when using the modified definition of AA in the AN outcome, the investigators observed a statistically significant increased risk for the modified AA subgroup as compared to the 10-19 mm group. The modified AA group had twice the metachronous risk for CRC, which was not statistically significant but this finding may have been underpowered.

Caution

The study may also limited by a lack of racial diversity, as data were sourced from New Hampshire endoscopy centers. However, the cohort maintains significant diversity across ethnic, socioeconomic, and rural/urban dimensions. Future research in more racially heterogeneous settings would be valuable to confirm these findings.

My Practice

Currently, I follow the 2020 USMTF post polypectomy surveillance guidelines which recommend a 3 year interval for patients with advanced adenomas.Therefore I recommend the 3 year interval for those patients with an adenoma of 10 mm or larger.

Future Research

While the study did not observe a difference in risk between the 10-19 mm tubular adenomas and the modified definition of AAs, quantifying metachronous risks for AN and CRC in the 10-14 mm and 15-19 mm tubular adenoma subgroups as suggested in the paper seems like a reasonable and desirable next step.

Conflict of Interest

The author of the summary has no conflicts of interest.

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EUS-CDS vs ERCP to Prevent Postprocedural Pancreatitis in Malignant Distal Biliary Obstruction

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This summary reviews Anderloni A, Spadaccini M, Binda C, et al. Endoscopic ultrasound-guided choledochoduodenostomy vs endoscopic retrograde cholangiopancreatography in malignant distal biliary obstruction to prevent postprocedural pancreatitis: A randomized trial. Gastroenterology. 2026 Jan 9: S0016-5085(25)05982-7. doi: 10.1053/j.gastro.2025.09.003.

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Keywords: Endoscopy, ERCP, obstructive jaundice, endoscopic ultrasound-guided choledochoduodenostomy

STRUCTURED ABSTRACT

Question: Is endoscopic ultrasound-guided choledochoduodenostomy (EUS-CDS) superior to endoscopic retrograde cholangiopancreatography (ERCP) in reducing post-procedural acute pancreatitis in patients with malignant distal biliary obstruction?

Design: Multicenter, randomized superiority trial. Randomization was performed without stratification, using permuted blocks of 4 to ensure balanced group sizes within each participating center throughout enrollment.

Setting: Six high-volume tertiary referral centers in Italy.

Patients: Adults aged ≥18 years with obstructive jaundice due to malignant distal biliary obstruction and a dilated common bile duct (≥15 mm). A total of 220 patients were randomized (111 EUS-CDS; 109 ERCP).

Intervention: Primary biliary drainage with EUS-CDS using a cautery-enhanced lumen-apposing metal stent (8 mm x 8 mm or 6 mm x 8 mm) versus ERCP with placement of a covered self-expandable metal stent. Acute pancreatitis prophylaxis was performed by routine intravenous hydration with lactated Ringer (LR) solution and rectal administration of 100 mg of indomethacin immediately before each procedure in all patients without contraindication, as recommended by the updated ESGE guideline. The LR protocol consisted of an infusion at 3 mL/kg/h during and after the procedure, continued for up to 6–8 hours. Exclusion criteria included coagulopathy or thrombocytopenia at the time of the procedure (International Normalized Ratio ≥1.5 or platelet count < 50,000 /μL), or antithrombotic therapies precluding the procedure according to European Society of Gastrointestinal Endoscopy (ESGE) guidelines, pregnancy, life expectancy < 3 months, prior biliary sphincterotomy or stent placement, and inability to sign the informed consent. Patients with a history of, current symptoms of, or radiologic evidence of gastric outlet obstruction (extensive duodenal invasion and/or gastrectasia) were also excluded. A prophylactic pancreatic stent was placed in patients deemed at high risk for post-procedure pancreatitis, and easy access to the PD according to ESGE guidelines.

Outcomes: Primary outcome was postprocedural acute pancreatitis. Secondary outcomes included technical success, clinical success, adverse events, 6-month stent patency, procedural time, and mortality.

Data Analysis: Intention-to-treat analysis.

Funding: An unrestricted grant was received from Boston Scientific. The sponsor had no role in study design, data collection, or analysis.

Results: Postprocedural acute pancreatitis occurred in 1.8% of patients in the EUS-CDS group compared with 7.3% in the ERCP group (relative risk 0.25). Technical success was higher with EUS-CDS (94.6% vs 78.9%), and procedural time was significantly shorter. Overall adverse event rates, stent patency, and 6-month mortality were similar between groups. Two acute pancreatitis cases occurring in the ERCP group were graded as severe, with 1 of the patients dying 5 days post-procedure due to a multiorgan failure related to the systemic involvement of the pancreatitis. There were 2 cases of stent maldeployment (1.8%) in the EUS-CDS

group, 1 of which was salvaged endoscopically with a bridging tubular stent. The other case required surgery due to the maldeployment of the second flange of the stent outside the duodenal lumen, leading to the rapid formation of a peri-duodenal collection and loss of safe access to the CBD. The event was classified as severe. Technical failures in the ERCP group occurred due to failed deep cannulation in 19 patients and inability to reach the papilla in 4 patients due to duodenal tumor involvement, despite no prior clinical or radiologic evidence of gastric outlet obstruction.

COMMENTARY

Why Is This Important?

Post-ERCP pancreatitis is the most common adverse event following biliary drainage with ERCP and may delay oncologic therapy. Strategies that reduce this risk without compromising efficacy are clinically important. In addition, there has been emerging data on EUS-CDS as a primary modality in treatment of malignant distal biliary obstruction.

Key Study Findings

This randomized trial comparing EUS-CDS and ERCP in malignant distal biliary obstruction showed that EUS-CDS significantly reduced postprocedural pancreatitis compared with ERCP while maintaining comparable overall safety and clinical efficacy, with higher technical success and shorter procedural time.

However, it is important to note that 17.4% of the failed ERCP cases occurred due to failed deep cannulation, which is higher than previously reported. Also, all cases had CBD diameter of > 15 mm and therefore, these conclusions may not be universally applicable to all cases of malignant distal biliary obstruction.

Caution

The results of this trial need to be interpreted with caution. Firstly, technical success with ERCP was reported to be 78.9%, and in 17.4% of cases of failed ERCP, the reason for ERCP failure was reported to be a failed deep cannulation. This number is high compared to prior reports and it is unclear on what advanced biliary cannulation techniques were used prior to classifying ERCP as failed. Secondly, the study included patients with CBD diameter of 15 mm or greater, and therefore, EUS-CDS may not be a viable option in all cases of distal malignant biliary obstruction. Thirdly, the primary outcome of the study was post-procedure acute pancreatitis rate. Post-procedure pancreatitis is no doubt a key outcome in ERCP which can carry significant morbidity and mortality, but majority of

cases of post-ERCP pancreatitis are mild, which was also the case in the present study except 2 cases of severe post-ERCP pancreatitis. Lastly, EUS-CDS was performed by experienced operators and this may not be generalizable to all endoscopists managing malignant distal biliary obstruction.

My Practice

My practice for managing malignant distal biliary obstruction is individualized to the patient. Despite the growing interest in EUS-CDS[1, 2], my preference is to attempt ERCP whenever major papilla can be accessed. In cases where the major papilla is not accessible due to duodenal obstruction or deformity, I consider performing EUS-CDS. EUS-CDS can be performed using either a tubular stent or a lumen apposing metal stent.[3] In cases where the CBD diameter is < 15 mm, my preference is to use a tubular fully covered metal biliary stent with anti-migration properties and use LAMS when CBD is dilated to at least 15 mm or more. While post-ERCP pancreatitis continues to be a major concern with ERCP, patients with malignant distal biliary obstruction are typically not considered to be a high-risk group for PEP.[3] In addition, placement of a pancreatic duct stent in cases where deep guidewire access to the PD is achieved has been shown to reduce the rate of pancreatitis.[4] Therefore, in my practice, if inadvertent PD cannulation is performed, I place a prophylactic pancreatic duct stent. Also, it is important to note that EUS-CDS was performed by experienced endoscopists in this study and this expertise may not be widely available. Endoscopists undertaking EUS-CDS should be well versed in salvaging techniques in cases of stent maldeployment during EUS-CDS. Lastly, while there have been reports of performing pancreaticoduodenectomy in patients who have undergone EUS-CDS,[5] in patients with resectable or borderline resectable disease, discussion with local surgery team and expertise should be taken into account prior to performing EUS-CDS.

For Future Research

Future research is needed for development of more tools for safe and easy performance of EUS-CDS as well as understanding the learning curve of EUS-CDS.

Conflict of Interest

Dr. Bilal is a consultant for Boston Scientific, Steris Endoscopy, Microtech, Aspero Medical and Cook Medical.

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EVIDENCE-BASED GI
AN ACG PUBLICATION

Listening to the Heart to Identify Liver Fibrosis: AI-Enabled ECGs as a Screening Tool for Advanced Chronic Liver Disease (The DULCE AI trial)


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LIVER

This summary reviews Simonetto DA, Rushlow D, Liu K, et al. Detection of undiagnosed liver cirrhosis via AI-enabled electrocardiogram: a pragmatic, cluster-randomized clinical trial. Nat Med. 2026 Jan;32(1):160-167.

Correspondence: Nikki Duong, MD. Associate Editor. Email: EBGI@gi.org

Keywords: artificial intelligence; electrocardiogram; cirrhosis; advanced chronic liver disease; population screening; noninvasive fibrosis assessment

STRUCTURED ABSTRACT

Question: Does an artificial intelligence–enabled electrocardiogram (AI-ECG) screening strategy increase detection of previously undiagnosed advanced chronic liver disease (CLD) compared with usual care in primary care settings?

Design: Pragmatic, cluster-randomized clinical trial. Primary care teams (clusters) were randomized 1:1 to AI-ECG–enabled screening or usual care, stratified by practice location and patient volume. The intervention was clinician-facing and embedded in routine workflows without direct patient contact.

Setting: Forty-five primary care practices across Southern Minnesota and Western

Wisconsin, comprising 98 care teams within an integrated health system.

Patients: Adults aged ≥18 years undergoing routine 12-lead ECG testing for standard clinical indications, without a prior diagnosis of cirrhosis or advanced CLD.

Intervention/Exposure: A validated machine-learning AI-ECG model was applied weekly to routine ECGs. In intervention clusters, clinicians received automated notifications when the AI-ECG probability exceeded a prespecified threshold (0.51), corresponding to an anticipated ~15%–18% positivity rate. Alerts recommended targeted clinical evaluation and sequential noninvasive liver disease assessment.

Outcomes: The primary outcome was a new diagnosis of advanced CLD within 180 days of ECG testing, defined by sequential noninvasive fibrosis assessments consistent with advanced fibrosis. Secondary outcomes included a new diagnosis of any liver fibrosis and rates of downstream liver-directed evaluation.

Data Analysis: Analyses followed an intention-to-screen approach at the cluster level. The trial was prospectively powered to detect a 50% relative increase in the detection of advanced CLD. Outcomes were compared between intervention and usual-care clusters using cluster-adjusted models, with prespecified subgroup analyses among AI-ECG–positive patients.

Funding: Mayo Clinic MAX Innovation Award.

Results: In the overall cohort, AI-ECG–enabled screening significantly increased detection of advanced CLD compared with usual care (1.0% vs 0.5%; odds ratio [OR] 2.09, 95% CI 1.22–3.55; $P = 0.007$). Among AI-ECG–positive patients (positivity 17.2%–17.6% across arms), detection of advanced CLD was 4.4% vs 1.1% (OR 4.37, 95% CI 1.94–9.88; $P < 0.001$). Detection of any fibrosis was also higher overall (1.7% vs 0.5%; OR 3.17, 95% CI 1.86–5.40) and among AI-ECG–positive patients (8.4% vs 1.1%; OR 8.03, 95% CI 3.50–18.4; all $P < 0.001$).

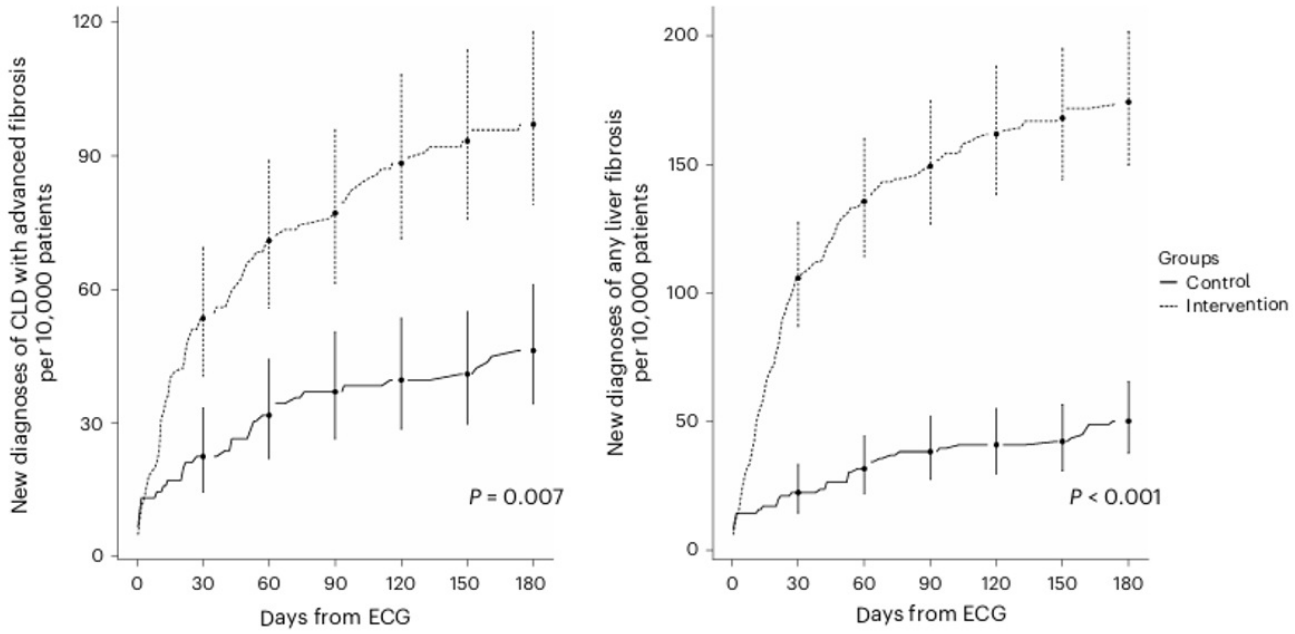

Figure 1. Cumulative diagnosis of chronic liver disease diagnosis following AI-enabled ECG screening. Cumulative incidence curves demonstrating higher rates of newly diagnosed chronic liver disease over time among patients in intervention clusters receiving AI-enabled ECG screening (dotted lines) compared with usual care (solid lines). Differences emerged early and widened over the 180-day follow-up period, supporting the role of ECG-based artificial intelligence in accelerating detection of undiagnosed liver disease.

COMMENTARY

Why Is This Important?

Advanced CLD affects an estimated 2%–5% of the adult population, yet remains underdiagnosed, with many patients first identified only after hepatic decompensation, hepatocellular carcinoma, or a liver-related hospitalization.[1] Despite the availability of validated noninvasive fibrosis assessments,[2,3] population-level screening has not been widely adopted in primary care due to limited access to elastography, competing clinical priorities, and workflow burden—particularly among patients with cardiometabolic multimorbidity who already have frequent healthcare encounters.[2,3]

ECGs represent a uniquely scalable opportunity for opportunistic screening. ECGs are low cost, universally available, and routinely obtained in patient populations that overlap with liver disease risk phenotypes, including obesity, diabetes, hypertension, and cardiovascular disease.[4] The DULCE trial addresses a critical and previously unanswered question: can an artificial intelligence–enabled ECG, pragmatically used within routine primary care workflows, meaningfully increase

detection of previously unrecognized advanced CLD?[5,6]

Importantly, this study moves beyond diagnostic accuracy to evaluate real-world clinical impact. By randomizing primary care teams and embedding AI-ECG alerts directly into clinician workflows–without additional patient contact–the trial tests a pragmatic "screen-to-diagnosis" pathway. The observed and 2-fold increase in detection of advanced CLD in the overall cohort, and more than four-fold increase among AI-ECG–positive patients, demonstrate that AI-enabled screening can shift detection upstream to a clinically actionable stage, where interventions to prevent decompensation and remain possible.

By leveraging a test already embedded in routine care, AI-ECG screening offers a pragmatic, systems-level strategy to address one of the central gaps in liver disease care: late recognition of advanced CLD. In the era of MASLD, where disease progression is often silent and referral-based strategies may miss high-risk patients, this approach provides a scalable pathway to earlier diagnosis and intervention.

Key Study Findings

Among 15,596 eligible adults (8,034 intervention; 7,562 control; mean age 63.4 ± 18.3 years; 53.6% women; mean BMI 35.3 ± 12.4 kg/m²), AI-ECG–enabled screening significantly increased detection of advanced CLD within 180 days compared with usual care (1.0% vs 0.5%; OR 2.09, 95% CI 1.22–3.55; P = 0.007).

Among AI-ECG–positive patients (17.2%–17.6%), detection of advanced CLD was substantially higher in intervention clusters than in usual care (4.4% vs 1.1%; OR 4.37, 95% CI 1.94–9.88; $P < 0.001$). Detection of any liver fibrosis was also increased overall (1.7% vs 0.5%; OR 3.17, 95% CI 1.86–5.40) and among AI-ECG–positive patients (8.4% vs 1.1%; OR 8.03, 95% CI 3.50–18.4; all $P < 0.001$). Approximately 85% of newly identified cases were detected at asymptomatic stages.

Caution

Although this was a pragmatic, cluster-randomized trial, several limitations merit consideration. Clinician adherence to AI-ECG alerts was incomplete, likely attenuating observed effect sizes and highlighting the importance of workflow integration. The primary endpoint captured diagnostic acceleration rather than downstream clinical outcomes such as hepatic decompensation, hepatocellular carcinoma, or mortality. Reliance on sequential noninvasive fibrosis assessment real-world practice but may allow misclassification near diagnostic thresholds.

Generalizability may be limited by the predominantly White cohort (~96%) and single integrated health system setting. Finally, effectiveness will likely depend on local implementation, as poorly integrated alerts or low clinician engagement may lead to alert fatigue and reduced clinical impact.

My Practice

Delayed recognition of advanced CLD, particularly among patients with cardiometabolic comorbidities, is a frequent barrier to timely intervention. We are seeing a rapid rise in steatotic liver disease, thus, identifying those patients with significant fibrosis is important to navigate appropriate specialty referrals and for consideration of early interventions. At the frontlines, in primary care settings, patients are often receiving ECGs routinely. This presents a relatively simple and scalable opportunity to identify patients with chronic liver disease. Ideally, this could be used in conjunction with other non-invasive assessments such as FIB-4. Rather than standalone tests, these could be used as structured triggers to activate a standardized evaluation pathway and hepatology referral when indicated.

For Future Research

Future studies should determine whether AI-ECG–enabled detection of advanced CLD translates into improved patient-centered outcomes, including reduced hepatic decompensation, hepatocellular carcinoma, and liver-related mortality. Longer follow-up is needed to assess the durability of detection and downstream management after initial diagnosis. Implementation research should focus on optimizing clinician engagement, refining eligibility thresholds, and integrating AI-ECG outputs with established noninvasive fibrosis pathways to maximize yield while minimizing alert fatigue. External validation across racially, ethnically, and socioeconomically diverse populations – including safety-net and resource-limited settings – will be essential to assess generalizability and equity. Finally, cost-effectiveness analyses are needed to determine whether AI-ECG screening can be sustainably scaled as a pragmatic, population-level strategy for early detection of advanced CLD. Together, these steps will determine whether AI-ECG screening can be sustainably scaled as an equitable, population-level strategy for early detection of advanced CLD.

Conflict of Interest

The authors of this summary have no conflicts of interest to disclose.

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EVIDENCE-BASED GI
AN ACG PUBLICATION

Quality Indicators for ERCP

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ENDOSCOPY

STRUCTURED ABSTRACT

Question: What evidence-based quality indicators should be used to measure, benchmark, and improve the safety, effectiveness, and value of endoscopic retrograde cholangiopancreatography (ERCP) across the preprocedure, intraprocedure, and postprocedure phases of care?

Study design: Multisociety guideline and consensus document based on systematic literature review and expert appraisal.

Setting: Endoscopy units performing ERCP across diverse practice environments, including academic and community settings.

Patients: Adults undergoing ERCP for accepted biliary and pancreatic indications.

Interventions: The American College of Gastroenterology (ACG) and the American Society for Gastrointestinal Endoscopy (ASGE) convened an expert task force to update and refine ERCP-specific quality indicators. Indicators were categorized as process or outcome measures, assigned strength-of-evidence ratings, and linked to proposed performance targets. Priority indicators were identified based on clinical relevance, variability in clinical practice, and feasibility of measurement.

Results: Thirteen ERCP-specific quality indicators were proposed, spanning preprocedure, intraprocedure, and postprocedure domains. These indicators focus on appropriate patient selection, technical success, prevention of post-ERCP pancreatitis, and tracking of clinically meaningful downstream events such as unplanned hospitalization and biliary reintervention. The indicators are intended to guide quality improvement efforts rather than define standards for credentialing or reimbursement.

COMMENTARY

Why Is This Important?

ERCP is one of the most technically demanding and highest-risk procedures in gastroenterology, with outcomes that vary widely by operator experience, procedural volume, and institutional infrastructure. Despite advances in technique and prophylaxis, ERCP-related adverse events—including post-ERCP pancreatitis, bleeding, cholangitis, and unplanned hospitalization—remain a major source of patient morbidity and health care utilization. This updated ACG/ASGE quality indicators document provides a contemporary framework to standardize ERCP practice, reduce unwarranted variation, and promote measurable improvements in patient-centered outcomes.

Key Findings

This update proposes 13 ERCP-specific quality indicators across all phases of care, emphasizing appropriate indication selection, technical success (including cannulation and stone clearance), universal use of rectal nonsteroidal anti-inflammatory drugs (NSAIDs) in patients with an intact papilla, and systematic tracking of adverse events and unplanned downstream interventions. Compared with prior iterations, the document adopts a more restrictive approach to ERCP indications, reinforces ERCP as a predominantly therapeutic procedure, and highlights postprocedure outcomes such as unplanned hospitalization and biliary reintervention as pragmatic, high-value measures of quality.

Phase	Quality Indicator	Strength of Recommendation	Measure Type	Performance Target
Preprocedure	ERCP performed for an accepted indication and indication documented (priority)	1C1	Process	≥98%
	Informed consent obtained and documented, including ERCP-specific risks	3	Process	≥98%
	Prophylactic antibiotics administered for appropriate indications	2B	Process	≥98%
Intraprocedure	Deep cannulation of the duct of interest achieved in native papillae (priority)	1C	Outcome	≥90%
	Radiation exposure documented and exposure-reduction measures used	1C	Process	≥98%
	Successful extraction of extrahepatic bile duct stones in normal anatomy (priority)	1B	Outcome	≥90%
	Rectal indomethacin or diclofenac administered in patients with intact papilla (priority)	1A	Process	≥90%
	Use or nonuse of prophylactic pancreatic stent documented and tracked in high-risk cases	1A	Process	≥98%
Postprocedure	Unplanned hospital visit within 30 days of ERCP (priority)	1C	Outcome	<15%
	Unplanned biliary intervention within 30 days of ERCP	1C	Outcome	<15%
	Post-ERCP pancreatitis rate documented and tracked	3	Process	≥95%
	Clinically significant hemorrhage after sphincterotomy/sphincteroplasty documented and tracked	3	Process	≥95%
	Cholangitis within 30 days documented and tracked	3	Process	≥95%

Table 1. ERCP quality indicators with associated performance targets. Clinical implications of each strength of recommendation are as follows: 1A, strong recommendation, can be applied to most clinical settings; 1B, strong recommendation, likely to apply to most practice settings; 1 Cþ, strong recommendation, can apply to most practice settings in most situations; 1C, intermediate-strength recommendation, may change when stronger evidence is available; 2A, intermediate-strength recommendation, best action may differ depending on circumstances or patients or societal values; 2B, weak recommendation, alternative approaches may be better under some circumstances; 2C, very weak recommendation, alternative approaches are likely to be better under some circumstances; 3, weak recommendation, likely to change as data become available. ERCP, endoscopic retrograde cholangiopancreatography.

Caution

Several indicators rely on process measures rather than outcomes, reflecting ongoing challenges in defining objective, risk-adjusted ERCP benchmarks across heterogeneous practice settings. Rigid adherence to performance targets—particularly for cannulation success or prophylactic pancreatic stent placement—may inadvertently encourage overly aggressive maneuvers that increase procedural risk. These indicators are intended for internal quality improvement and benchmarking, not for credentialing, reimbursement, or punitive comparison.

My Practice

This document reinforces the importance of thoughtful case selection to avoid diagnostic ERCP, routine rectal NSAID prophylaxis in all ERCP performed on native papillas in the absence of contraindications, deliberate decision-making regarding when to persist versus defer during technically challenging ERCPs. It emphasizes the importance of tracking, the measurement and documentation of radiation exposure, to promote as low as reasonably achievable(ALAR) principles. Tracking unplanned hospitalizations and early reinterventions offers a practical way to identify opportunities for improvement in preprocedure evaluation, intraprocedure technique, and postprocedure care, while allowing meaningful longitudinal self-benchmarking.

Future Research

Future studies should focus on developing more objective outcome definitions for post-ERCP pancreatitis and bleeding, refining risk-adjusted benchmarks, and evaluating how structured quality improvement initiatives influence patient-centered outcomes and health care utilization. As alternative drainage strategies such as EUS-guided biliary drainage continue to evolve, their role within ERCP quality metrics will require ongoing reassessment.

Conflicts of Interest

The authors of the summary have no conflicts of interest.