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All Exam ADR Performs Similarly to Screening ADR in Predicting Post Colonoscopy Colorectal

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COLON

This summary reviews Anderson JC, Rex DK, Mackenzie TA, Hisey W, Robinson CM, Butterly LF. Adenoma detection rates calculated using all examinations are associated with lower risk for postcolonoscopy colorectal cancer: Data from the New Hampshire Colonoscopy Registry. Am J Gastroenterol. 2025. doi: 10.14309/ajg.0000000000003488.

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STRUCTURED ABSTRACT

Question: The goal was to examine the association between post-colonoscopy colorectal cancer (PCCRC) risk and an adenoma detection rate (ADR) which was calculated using exams with all indications, as compared to ADR restricted to only screening exams.

Design: Retrospective analysis of data from the New Hampshire Colonoscopy Registry (NHCR) which is a prospective statewide colonoscopy registry.

Setting: Endoscopy centers across New Hampshire, USA.

Patients: Analysis included NHCR patients with an index exam and at least 1 follow-up event 6 months or longer after the colonoscopy, either a colonoscopy or a CRC diagnosis.

Exposure: The exposure variable was endoscopist-specific ADR (ADR-A), calculated for all indications, divided into quintiles. The ADR-A was also compared to a screening ADR (ADR-S).

ADR-A. The proportion of all colonoscopies in patients 45 years or older with an adequate bowel preparation performed by an endoscopist regardless of indication with at least one adenoma divided by the total number of colonoscopies in patients 45 years or older with an adequate bowel preparation performed by that endoscopist regardless of indications.

ADR-S. The proportion of screening colonoscopies in patients 45 years or older with an adequate bowel preparation performed by an endoscopist with at least one adenoma divided by the total number of screening colonoscopies in patients 45 years or older with an adequate bowel preparation performed by that endoscopist.

Outcomes: The primary outcome, PCCRC was any CRC diagnosed ≥ 6 months after an index exam.

Data Analysis: Cox regression was used to model the hazard of PCCRC on ADR, controlling for age, sex, and other covariates.

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Results: In 32,535 patients, a lower hazard for PCCRC (n=178) was observed for ADR-A's > 23%, as compared to ADR-A's <23% (Reference) (23%-<29%: hazard ratio [HR] 0.56, 95% confidence interval [CI]: 0.36-0.87; 29%- <34%: HR 0.60, 95% CI: 0.38-0.94; 34%-<44%: HR 0.43, 95% CI: 0.29-0.65; and ≥44%: HR 0.32, 95% CI: 0.16-0.63) [**Table 1**]. The highest quartile of ADR-A (42%+) (HR=0.41 95% CI:0.23-0.75) had a similar protection from PCCRC as the highest quartile of ADR-S (35%+) (HR=0.38 95% CI:0.21-0.70) [**Table 2**]. We also observed 95% CIs for ADR's were 28% narrower (median=0.72; IQR:0.10) for endoscopists when using ADR-A versus ADR-S.

	ADR-A				
	< 23	23 - < 29	29 - < 34	34 - < 44	44 and higher
N	4,130	5,507	4,668	13,399	4,831
PCCRC (N)	47	35	31	54	11
PCCRC (%)*	1.14%	0.64%	0.66%	0.40%	0.23%
HR (95% CI)	1.0 (Reference)	0.56 (0.36-0.87)	0.60 (0.38-0.94)	0.43 (0.29-0.65)	0.32 (0.16-0.63)

Table 1. Unadjusted risks and adjusted hazard ratios for post colonoscopy colorectal cancer (PCCRC) as stratified by quintiles of endoscopist all exam adenoma detection rates (ADR-A).

*$P < 0.001$ (Chi Square for trend). CI, confidence interval; HR, hazard ratio.

ADR-A				
	< 25	25 - < 34	34 - < 42	42+
N	6,243	8,062	11,690	6,540
PCCRC (N)	59	54	50	15
PCCRC (%)*	0.95%	0.67%	0.43%	0.23%
HR (95% CI)	1.0 (Reference)	0.85 (0.58-1.24)	0.59 (0.40-0.87)	0.41 (0.23-0.75)
ADR-S				
	< 21	21 - < 29	29 - < 35	35+
N	6,050	12,020	7,316	7,149
PCCRC (N)	56	84	23	15
PCCRC (%)*	0.93%	0.70%	0.31%	0.21%
HR (95% CI)	1.0 (Reference)	0.81 (0.58-1.14)	0.47 (0.28-0.77)	0.38 (0.21-0.70)

Table 2. Unadjusted risks and adjusted hazard ratios for post colonoscopy colorectal cancer by quartiles of endoscopist adenoma detection rates.

*$P < 0.001$ (Chi Square for trend). ADR-A, endoscopist adenoma detection rate; ADR-S, surveillance adenoma detection rate; CI, confidence interval; HR, hazard ratio.

COMMENTARY

Why Is This Important?

The adenoma detection rate (ADR) is an important endoscopist-specific quality measure. Higher ADRs have been shown to be associated with lower risks for post colonoscopy colorectal cancer (CRC).[1-3] ADR has been calculated using only screening colonoscopy.[4,5] The recommended ADR benchmark, which had been 25% for screening colonoscopy, was recently raised to 35%

in conjunction with lowering the age to begin measurement to 45 years and expanding the procedure indications to be included in ADR measurement.[6-8]

These data validate the use of all-exam ADR as a quality measure which can have many upstream benefits. Using all-exam ADR could decrease that likelihood of an endoscopist "gaming" the system by changing the indication depending upon exam findings. For example, an endoscopist could be tempted to change the indication of an exam from diagnostic to screening if an adenoma is found.[9] An all-exam ADR calculation may also be simpler for endoscopists since it eliminates the need for differentiating by the exam indication. Finally, the use of ADR-A increases the volume of colonoscopies for each endoscopist, allowing for a more precise measurement of the endoscopist's detection rate. These are the major reasons why the recent ACG/ASGE quality metric guidelines endorsed the use of an all-exam ADR.[6]

With respect to ADR-A goals for endoscopists, these data suggest that higher ADR-As are associated with lower PCCRC risks. The current benchmark as per the recent ACG/ASGE latest recommendations on quality indicators for colonoscopy is 35%. This benchmark falls within the 4th quintile of ADR-A which is associated with a lower HR than the lowest quintile. This cutoff of 35% was also the optimal point on the ROC curve. While the lowest HR was observed for the highest quintile of an ADR-A of 44% or higher, this should be an aspirational target.

Key Study Findings

These data demonstrating lower PCCRC risk in exams performed by endoscopists with higher ADR's calculated with all exams help to validate ADR-A as a quality measure. ADR-A may also increase precision of the calculated ADR. Endoscopists should strive for a higher ADR-A with 44% as an aspirational target.

Caution

The low racial diversity in NH may decrease the generalizability of the findings. Thus, more data are needed in other more racially diverse populations. In addition, since surveillance exams are associated with higher adenoma detection, practices with a higher mix of repeat colonoscopies may have higher ADRs.[10]

My Practice

An important factor in optimizing adenoma detection is the bowel preparation. All of my patients have a split bowel preparation.[11] When performing a colonoscopy, I make the assumption that the patient has an adenoma that needs to be detected. Thus, I carefully interrogate and wash every fold, adequately distending the lumen, utilizing an adequate withdrawal time, typically of 8 minutes or longer. I also reintubate the proximal colon as highlighted in the recent ACG/ASGE

recommendations.[6,12] In addition, in our endoscopy unit we track our ADR and SDRs as well as quality of bowel preparation and completion rates, ensuring that we are meeting established benchmarks.[6,11,12] Although, current benchmark as per the recent ACG/ASGE latest recommendations on quality indicators for colonoscopy is 35%, I try to achieve an ADR-A of 44% or greater. In addition, our NHCR data suggest that even if endoscopists achieve an adequate ADR, they could still have a low serrated detection rate.[13-15] Therefore, I also make sure that I have an SSPDR of 6% or greater as suggested by our NHCR data.[15]

For Future Research

These data should be validated in other populations.

Conflict of Interest

Dr Anderson has no financial conflict of interest.

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