Is Tissue Really the Issue? How the Polyp Detection Rate May Be a Good Enough Quality Measure Among Trainees

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Published online: 21 February 2020
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Although colonoscopy is unquestionably a powerful tool used for the prevention and early detection of colon cancer, there is growing awareness of the variability in the quality of screening colonoscopy, as a result of patient and endoscopist factors [1]. While several factors can be measured, the most important provider-specific indicator of colonoscopy quality is the adenoma detection rate (ADR), defined as the proportion of screening colonoscopies in which at least one adenoma is detected, which correlates inversely with the risk of interval colorectal cancer after colonoscopy [2]. Current benchmarks require an ADR of $\geq 20\%$ and $\geq 30\%$ in female and male patients, respectively.

A significant drawback of using ADR as a marker of quality is that its calculation is cumbersome. Determining ADR requires integration of endoscopic and pathologic data, and these data—even when recorded in structured databases—are often housed separately and need to be merged manually. Automated reporting of ADR requires sophisticated back-end algorithms, without which a time-consuming manual audit is needed.

Due to the challenges of calculating ADR, numerous studies have evaluated using the overall polyp detection rate (PDR) as a surrogate for ADR [3]. PDR—the proportion of screening colonoscopies in which at least one polyp is removed—has the significant advantage of not requiring cross-referencing with pathologic data and is therefore easier to extract from electronic endoscopy records. Evidence exists that ADR and PDR are closely correlated [4, 5].

In this issue of *Digestive Diseases and Sciences*, Ng et al. [6] report that the PDR is a good surrogate for ADR among gastroenterology trainees, a novel cohort for the study of the utility of PDR. Ng et al. conducted a retrospective study

that included 1600 procedures conducted by 24 fellows over a 3-year period. In addition to ADR, the detection rates for advanced neoplasia (ANDR) and sessile serrated polyps (SSPDR) were calculated and correlated with PDR.

Overall PDR, ADR, ANDR, and SSPDR were 72%, 52%, 14%, and 2%, respectively. As in prior studies, detection rates varied according to the type of polyp and colonic site. Whereas PDR (48%) was highest in the left colon, ADR (32%) and ANDR (7%) were highest in the right colon. The correlations between PDR and ADR were site dependent, with a stronger correlation in the right ($r=0.91$) and transverse ($r=0.94$) colon than in the left colon ($r=0.80$), reflecting the high prevalence of hyperplastic polyps within the left colon. The overall correlation between PDR and ADR was strong ($r=0.87$, $p<0.0001$), leading the authors to conclude that PDR could be a useful tool to replace ADR as a means to monitor colonoscopy quality in trainees. Correlation between PDR and overall SSPDR and ANDR was not statistically significant, limited by the relatively small number of lesions detected.

The strengths of this study include a robust sample size of patients and trainees supervised by relatively few attending endoscopists, which while controlling the number of variables, also may have limited generalization to other training programs. The study was conducted at a single VA hospital, in an overwhelmingly male-predominant patient sample. Since the baseline prevalence of adenomas is higher in males, a greater proportion of polyps resected were adenomatous. In this study, since the overall ADR of 52% is high, it is unclear if this led to a more robust correlation between PDR and ADR. It would have been helpful to report withdrawal times in order to contextualize the high ADR. Moreover, it was not stated whether diminutive hyperplastic-appearing left-sided polyps were always resected. Some endoscopists do not always resect these lesions as there is good evidence they do not increase the risk of advanced neoplasia, and thus alternative practices would alter the left-sided and overall PDR/ADR ratio. Last, there was lack

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of granular information regarding the degree of hands-on involvement of the supervising endoscopists for any given procedure. A supervisor observing a colonoscopy is quite different from a supervisor performing the withdrawal portion of the colonoscopy for whatever reason. Supervisor involvement may also differ based on the training year of the fellow and program policies.

Despite the above limitations, the correlation between PDR and ADR found in this study is particularly impactful in the trainee environment, where resources for ADR calculation may be limited. It is important to track the quality of colonoscopy among trainee endoscopists. For one, there is evidence that may suggest practice characteristics for proceduralists may carry over into independent practice [7]. Furthermore, supervisors' behaviors that lead to high-quality colonoscopy may imprint upon trainees [8]. PDR, which is easily calculable, may simplify the process of providing feedback to trainees and their supervisors, which would be of value to training programs that strive to produce competent endoscopists.

Surrogate markers are never perfect, and—as Yoon and Cha point out in a previous editorial [9]—focusing on PDR may risk incentivizing unnecessary polypectomy. The colonoscopist may be overly aggressive in resecting non-neoplastic polyps, which are not considered to have a risk of becoming cancer. Nonetheless, the ease of using PDR and its potential utility in guiding trainee development may outweigh its potential shortcomings. At present, since most training programs do not track any quality measures for trainees, something is likely to be better than nothing. As such, the findings of Ng et al. are a valuable contribution to attempts to improve the quality of colonoscopy and train future generations of endoscopists in cancer prevention.

Take-Home Points

- Though the adenoma detection rate (ADR) is an important quality benchmark for colonoscopy, it can be cumbersome to calculate.
- Since the polyp detection rate (PDR) correlates well with the ADR, the PDR may be a good surrogate for the ADR

for reporting colonoscopy quality, in particular among trainees.

Funding None.

Compliance with Ethical Standards

Conflict of interest The authors do not have any conflicts of interest to disclose.

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