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Bibliography

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The National Polyp Study showed that colonoscopy with removal of polyps reduced the incidence of colorectal cancer (CRC) and CRC-related mortality [1]. After a median follow-up time of 16 years, there was a 53 % reduction in CRC-related mortality in the group of patients who underwent removal of adenomas compared with the general population [1]. Although studies have shown the association between findings at index colonoscopy and the risk of metachronous advanced neoplasia [2], there is a lack of evidence about the optimal surveillance interval after polypectomy. Risk estimates used to be mainly based on histology, location, size, and number of adenomas at index colonoscopy. However, there is new evidence showing the risk of metachronous CRC after the removal of serrated polyps [3].

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Furthermore, outcomes of surveillance colonoscopy have been based on the risk of detecting metachronous advanced neoplasia, mainly defined as advanced adenomas or CRC [2]. Several large cohort studies have now provided evidence about the risk of CRC and CRC-related mortality after polypectomy, a clinically more relevant outcome [4].

Since the introduction of colorectal screening programs, the number of colonoscopies has increased tremendously, with increasing number of polyps detected. In addition, there is increased awareness of the importance of performing a high-quality colonoscopy that is complete, with adequate bowel preparation, adequate adenoma detection rate, and radical polypectomy [5].

Given the increase in polyps that are being detected, and the evolving evidence available on baseline polyp characteristics and the risk for metachronous neoplasia, both the US Multi-Society Task Force on Colorectal Cancer (USMSTF) and the European Society of Gastrointestinal Endoscopy (ESGE) updated their post-polypectomy guidelines in 2020 [6, 7]. Both guidelines use CRC incidence and CRC mortality as the relevant outcomes.

The USMSTF guideline is more complex and defines five risk categories including a high risk group (adenoma ≥ 10 mm, high grade dysplasia [HGD] or (tubulo)villous histology, traditional serrated adenoma, sessile serrated polyp [SSP] ≥ 10 mm or with dysplasia or 5–10 tubular adenoma/SSPs < 10 mm) with a 3-year surveillance interval, three intermediate risk groups, and a low risk group with a normal colonoscopy (no adenoma or serrated polyp, except hyperplastic polyps < 10 mm) with a 10-year surveillance interval [6].

The ESGE guideline is far more restrictive and simpler, and defines two risk categories. The ESGE advises a 3-year interval for the high risk group (adenomas ≥ 10 mm, with HGD, serrated polyp ≥ 10 mm or with dysplasia, or 5–10 adenomas), and referral back to the national screening program for all individuals with low risk findings (all serrated polyps < 10 mm, all adenomas < 10 mm, and < 5 adenomas in total). When there is no CRC screening program available, colonoscopy should be repeated after 10 years [7].

In this issue of *Endoscopy*, Liu et al. used New Hampshire Colonoscopy Registry data to compare the ability of the high risk group in the USMSTF and ESGE guidelines to identify patients with metachronous advanced neoplasia (advanced adenoma, advanced serrated polyp, or CRC). The study included 20 458 patients with a polyp at high quality index colonoscopy between 2004 and 2019 and first surveillance colonoscopy at least 12 months after index colonoscopy [8].

The outcome of metachronous lesions was determined at first surveillance colonoscopy (irrespective of the time interval). CRC incidence was determined by linking with the New Hampshire State Cancer Registry, irrespective of number and findings of surveillance colonoscopies.

The USMSTF high risk group consisted of 2517 patients and the ESGE high risk group included 2450 patients (both 12 % of the total cohort). The risk of metachronous advanced neoplasia was 13.6 % for both the USMSTF and ESGE high risk groups, compared with 5.1 % in the USMSTF low risk group and 6.3 % in the ESGE low risk group ($P < 0.001$) [8].

The discriminative ability for predicting metachronous advanced neoplasia was almost identical for both high risk groups. Omitting villous histology in the ESGE high risk group did not influence the outcome. This is in line with results of a systematic review and pooled analysis showing no significant association between baseline adenoma with villous histology and metachronous adenoma [2].

The risk of metachronous advanced neoplasia was also significantly higher for the three USMSTF intermediate risk groups compared with the low risk group, ranging from 13.5 % to 7.4 % compared with 5.1 %. Furthermore, the negative predictive value (NPV) for metachronous advanced neoplasia was highest when combining the USMSTF high and intermediate risk groups (surveillance intervals 3, 3–5, 5–10, 7–10 years; 45 % of the total cohort), but the difference between this and the USMSTF high risk group was minimal (NPV 94.9 % vs. 93.7 %) and would lead to a high increase of colonoscopies without relevant findings.

Given the limited capacity in colonoscopy services, resources should be used efficiently, and benefits and harms of surveillance colonoscopy should be weighed against prevention of CRC incidence and CRC mortality. Using the New Hampshire Colonoscopy Registry data, the unadjusted CRC risk was low, 1 % in both high risk groups, giving a CRC incidence for the USMSTF high risk group of 3.5/100 000 person-years compared with 1.1 in the low risk group. For the ESGE high risk group, this was 3.4/100 000 person-years compared with 1.2 in the ESGE low risk group, leading to a hazard ratio of 3.0 for both high risk groups compared with low risk groups.

In conclusion, the study by Lui et al. shows adequate discriminative ability for predicting metachronous advanced neoplasia of both high risk groups as determined by the USMSTF and ESGE guidelines. Increasing the discriminative ability by adding other risk categories to the high risk group will have a minimal impact on the NPV but will have a major impact on colonoscopy resources. In order to estimate the benefit and harms of surveillance colonoscopies, we should now focus on the most clinically relevant outcome, the risk of CRC incidence and CRC-related mortality. A large randomized controlled trial, the European Polyp Surveillance Trial (EPoS) is currently evaluating whether surveillance intervals for high risk groups can be extended from 3 years to 5 years with respect to CRC risk (ClinicalTrials.gov NCT02319928). This study will give additional guidance in optimizing our surveillance policy with a better balance between benefits and harms of our practice, and striving toward less is more.

Competing Interests

The authors declare that they have no conflict of interest.

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