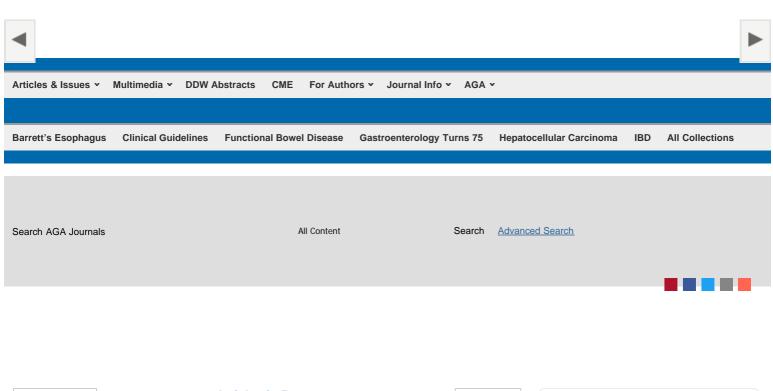


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Long-term Risk of Colorectal Cancer After Removal of **Conventional Adenomas and Serrated Polyps**

Xiaosheng He^{1,2,3,†}, Dong Hang^{4,5,†}, Kana Wu⁵, Jennifer Nayor⁶, David A. Drew^{2,3}, Edward L. Giovannucci^{5,7,8}, Shuji Ogino^{9,10,8,11}, Andrew T. Chan^{2,3,7,11,12}, Mingyang Song^{2,3,5,8},

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Abstract

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Background & Aims

Endoscopic screening reduces incidence and mortality of colorectal cancer (CRC) because precursor lesions, such as conventional adenomas or serrated polyps, are removed. Individuals with polypectomies are advised to undergo colonoscopy surveillance to prevent CRC. However, guidelines for surveillance intervals after diagnosis of a precursor lesion, particularly for individuals with serrated polyps, vary widely, and lack sufficient supporting evidence. Consequently, some high-risk patients do not receive enough surveillance and lower-risk subjects receive excessive surveillance.

Methods

We examined the association between findings from first endoscopy and CRC risk among 122,899 participants who underwent flexible sigmoidoscopy or colonoscopy in the Nurses' Health Study 1 (1990–2012), Nurses' Health Study 2 (1989–2013), or the Health Professionals Follow-up Study (1990–2012). Endoscopic findings were categorized as no polyp, conventional adenoma, or serrated polyp (hyperplastic polyp, traditional serrated adenoma, or sessile serrated adenoma, with or without cytological dysplasia). Conventional adenomas were classified as advanced (≥10 mm, high-grade dysplasia, or tubulovillous or villous histology) or non-advanced, and serrated polyps were assigned to categories of large (≥10 mm) or small (< 10 mm). We used Cox proportional hazards regression model to calculate the hazard ratios (HRs) of CRC incidence, after adjusting for various potential risk factors.

Results

After a median follow-up period of 10 years, we documented 491 incident cases of CRC: 51 occurred in 6161 participants with conventional adenomas, 24 in 5918 participants with serrated polyps, and 427 in 112,107 participants with no polyp. Compared to participants with no polyp detected during initial endoscopy, the multivariable HR for incident CRC in individuals with an advanced adenoma was 4.07 (95% CI, 2.89–5.72) and the HR for CRC in individuals with a large serrated polyp was 3.35 (95% CI, 1.37–8.15). In contrast, there was no significant increase in risk of CRC in patients with non-advanced adenomas (HR, 1.21; 95% CI, 0.68–2.16, P=.52) or small serrated polyps (HR, 1.25; 95% CI, 0.76–2.08; P=.38).

Conclusions

These findings provide support for guidelines that recommend repeat lower endoscopy within 3 years of a diagnosis of advanced adenoma and large serrated polyps. In contrast, patients with non-advanced adenoma or small serrated polyps may not require more intensive surveillance than patients without polyps.

Key Words:

polypectomy, interval cancer, early detection, secondary prevention

Abbreviations:

BMI (body mass index), BSG (British Society of Gastroenterology), CI (confidence interval), CRC (colorectal cancer), ESGE (European Society of Gastrointestinal Endoscopy guidelines), HR (hazard ratio), HP (hyperplastic polyp), HPFS (the Health Professionals Follow-up Study), MET (metabolic equivalent of task), NHS (the Nurses' Health Study), NHS2 (the Nurses' Health Study 2), SSA/P (sessile serrated adenomas/polyp), SP (serrated polyp), TSA (traditional serrated adenoma), USMSTF (United States Multi-Society Task Force)

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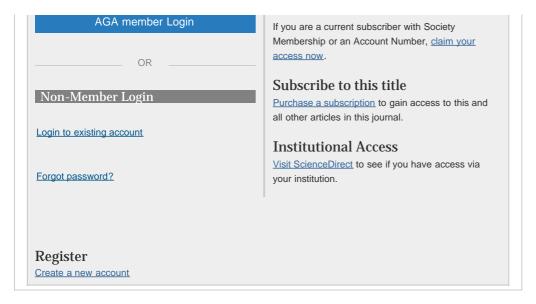
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Conflicts of interest: Andrew T. Chan previously served as a consultant for Bayer Healthcare and Pfizer Inc. for work unrelated to the topic of this manuscript. This study was not funded by Bayer Healthcare or Pfizer Inc. No other conflict of interest exists.

Author contributions: Drs. Chan and Song have full access to all of the data in the study, and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: A.T.C, M.S.

Acquisition of data: X.H., D.H., K.W., A.T.C, M.S.

Analysis and interpretation of data: X.H., D.H., J.N., D.A.D, E.L.G., A.T.C., M.S.

Drafting of the manuscript: X.H., M.S.

Critical revision of the manuscript for important intellectual content: K.W., S.O., J.N., D.A.D, E.L.G., A.T.C., M.S.

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[†] X.H. and D.H. contributed equally.

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