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## Baseline Colonoscopy Findings Associated with 10-Year Outcomes in a Screening Cohort Undergoing Colonoscopy Surveillance

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## Abstract

## Abstract

## Background &amp; Aims

Few studies have evaluated long-term outcomes of ongoing colonoscopic screening and surveillance in a screening population. We aimed to determine the 10-year risk for advanced neoplasia (defined as adenomas  $\geq 10$ mm, adenomas with villous histology or high-grade dysplasia, or colorectal cancer [CRC]) and assessed whether baseline colonoscopy findings were associated with long-term outcomes.

## Methods

We collected data from the Department of Veterans Affairs Cooperative Studies Program Study on 3121 veterans asymptomatic veterans (50–75 years old) who underwent a screening colonoscopy from 1994 through 1997 at 13 medical centers and were then followed for 10 years or until death. We included 1915 subjects with at least 1 surveillance colonoscopy and estimated cumulative incidence of advanced neoplasia Kaplan-Meier curves. We then fit a longitudinal joint model to estimate risk of advanced neoplasia at each subsequent examination, adjusting for multiple colonoscopies within individuals.

## Results

Through 10 years of follow up, there were 146 individuals among all baseline colonoscopy groups found to have at least 1 incident advanced neoplasia. The cumulative 10-year incidence of advanced neoplasia was highest among those with baseline CRC (43.7%; 95% CI, 13.0%–74.4%), followed by those with baseline AA (21.9%; 95% CI, 15.7, 28.1). The cumulative 10-year incidence of advanced neoplasia was 6.3% (95% CI, 4.1%–8.5%) and 4.1% (95% CI, 2.7%–5.4%) for baseline 1-2 adenomas and no neoplasia, respectively (log-rank  $P=$ .10). After adjusting for prior surveillance, the risk of advanced neoplasia at each surveillance examination was not significantly increased in veterans with 1 or 2 small adenomas at baseline (odds ratio, 0.96; 95% CI, 0.67–1.41) compared to veterans with no baseline neoplasia.

## Conclusions

Baseline screening colonoscopy findings associate with advanced neoplasia within 10 years. Individuals with only 1 or 2 small adenomas at baseline have a low risk of advanced neoplasia over 10 years. Alternative surveillance strategies, such as the use of non-invasive CRC screening modalities, could be considered for these individuals.

## Keywords:

[colon cancer](#), [prognostic factors](#), [tumor](#), [cancer prevention](#)

## Abbreviations used in this paper:

[AN](#) (advanced neoplasia), [CI](#) (confidence interval), [CRC](#) (colorectal cancer), [CSP](#) (Cooperative Studies Program), [EMR](#) (Electronic Medical Record), [FIT](#) (Fecal Immunochemical Test), [OR](#) (odds ratio), [PLCO](#) (Prostate, Lung, Colorectal, and Ovarian trial), [VA](#) (Department of Veteran Affairs)

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#### Disclosures

Douglas J. Robertson serves as a consultant for Freenome and for serving on the scientific advisory board for Metabolomic Technologies, Inc. All other authors have no potential conflicts to disclose.

#### Author contributions

Study concept and design: DL, DP, ERH, ZFG; Acquisition of data: BAS, LWM, MCO, AJB, RT, TSR; Analysis and interpretation of data: DL, XQ, TH, BAS, ERH; Drafting of manuscript: ERH, MCO, ANM, DL, BAS, DP; Critical revision of the manuscript for important intellectual content: LWM, DW, SG, ZFG, DJR; Statistical analysis: ERH, XQ, TSR, KJS, CDW, TH; Administrative, technical, or material support: MCO, ANM; Study supervision: DP, DL


The views expressed in this article are those of the authors and do not necessarily represent the views of the Department of Veterans Affairs or the government of the United States.

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