ORIGINAL ARTICLE

Quality Indicators for Colonoscopy and the Risk of Interval Cancer

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ABSTRACT

Background

Although rates of detection of adenomatous lesions (tumors or polyps) and cecal intubation are recommended for use as quality indicators for screening colonoscopy, these measurements have not been validated, and their importance remains uncertain.

Methods

We used a multivariate Cox proportional-hazards regression model to evaluate the influence of quality indicators for colonoscopy on the risk of interval cancer. Data were collected from 186 endoscopists who were involved in a colonoscopy-based colorectal-cancer screening program involving 45,026 subjects. Interval cancer was defined as colorectal adenocarcinoma that was diagnosed between the time of screening colonoscopy and the scheduled time of surveillance colonoscopy. We derived data on quality indicators for colonoscopy from the screening program's database and data on interval cancers from cancer registries. The primary aim of the study was to assess the association between quality indicators for colonoscopy and the risk of interval cancer.

Results

A total of 42 interval colorectal cancers were identified during a period of 188,788 person-years. The endoscopist's rate of detection of adenomas was significantly associated with the risk of interval colorectal cancer ($P=0.008$), whereas the rate of cecal intubation was not significantly associated with this risk ($P=0.50$). The hazard ratios for adenoma detection rates of less than 11.0%, 11.0 to 14.9%, and 15.0 to 19.9%, as compared with a rate of 20.0% or higher, were 10.94 (95% confidence interval [CI], 1.37 to 87.01), 10.75 (95% CI, 1.36 to 85.06), and 12.50 (95% CI, 1.51 to 103.43), respectively ($P=0.02$ for all comparisons).

Conclusions

The adenoma detection rate is an independent predictor of the risk of interval colorectal cancer after screening colonoscopy.

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