Viewpoint: What Is the Value of Screening Colonoscopy in Very Elderly Patients?

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Screening Colonoscopy in Very Elderly Patients: Prevalence of Neoplasia and Estimated Impact on Life Expectancy

Lin OS, Kozarek RA, Schembre DB, et al
JAMA. 2006;295:2357-2365

Summary

The number of screening colonoscopies performed in elderly US patients (aged > 65 years) has increased dramatically since Medicare coverage for average-risk individuals was approved in 2001. The current guidelines, however, do not specify an age limit above which screening is not recommended. Colonoscopy in very elderly patients (> 80 years of age) is associated with lower procedural completion rates, higher complication rates, and higher risk of inadequate bowel preparation. As such, some clinicians may have concerns with regard to recommending colorectal cancer screening to extremely elderly patients. Furthermore, these elderly patients have shorter life expectancies, potentially limiting the benefits of screening procedures.

The objective of this study by Lin and colleagues was to estimate the mean extension in life expectancy in very elderly vs younger patients using cross-sectional data collected from individuals undergoing screening colonoscopy. The clinical data evaluated came from 1244 asymptomatic individuals in 3 age groups (50-54 years [n = 1034]; 75-79 years [n = 147]; and ≥ 80 years [n = 63]) who underwent screening colonoscopy at a US teaching hospital and clinic. The main outcome measures were: prevalence of colonic neoplasia, estimated gain in life expectancy (calculated by polyp lag time to cancer and life expectancy after colorectal cancer diagnosis), and the mean life expectancy across the 3 age ranges. To estimate life expectancy gains, the study authors compared the life expectancy of each screened patient with the life expectancy of that same patient if he or she had not been screened, then averaged the gains for each of the 3 age groups. Data for life expectancy were taken from national databases and life table analyses. The reported prevalence of neoplasia is shown in the Table.

Despite a higher prevalence of neoplasia in elderly patients, the mean extension in life expectancy was much lower in the group aged 80 years or older than in the 50- to 54-year-old group (0.13 vs 0.85 years). By a sensitivity analysis, with longer polyp lag times, the mean extension in life expectancy decreased more in the elderly than in the younger patients. Alternatively, using the assumption that a smaller proportion of adenomas progress to colorectal cancer, the mean extension in life expectancy decreased less in the elderly than in the younger patients.

Viewpoint

The early detection of colorectal cancer is associated with a dramatic reduction in disease-related mortality.
Recognizably, the incidence of colorectal cancer increases sharply with advancing age. Most patients, in fact, are older than 65 years at the time of presentation with disease. In this study, although the prevalence of colonic neoplasia increased with age, screening colonoscopy in very elderly persons (aged ≥ 80 years) resulted in only 15% of the expected gain in life expectancy in younger patients. The main intent of colonoscopic screening is the detection and removal of a precancerous adenoma. The lag time before this precancerous lesion can develop into cancer and cause death is unusually long. This latter feature suggests that the potential benefit of colonoscopic screening in very elderly patients may be smaller than what can be expected for other types of cancer screening because elderly patients are more likely to die of "natural" causes before the adenoma develops into cancer. Therefore, even though the prevalence of colonic neoplasia increases with age, screening colonoscopy in very elderly patients results in smaller gains in life expectancy compared with in younger patients -- even when adjusted for life expectancy. Depending on the assumptions made, this difference can be as much as 15-fold.

There are several caveats before interpreting these data as justifying that patients ≥ 80 years should not undergo screening for colorectal cancer. First, it was not the intent of this study to determine the age cutoff for discontinuing colorectal cancer screening. It is apparent from the study that chronologic age alone was the only parameter considered when addressing the issue of colorectal cancer screening in the elderly patient. Second, although not done in this study, assessment of "physiologic age" and comorbid conditions would give a more accurate determination of life expectancy for the individual patient.

Overall, however, these data suggest that the benefit of screening colonoscopy in very elderly patients may be smaller than what is commonly believed. This should help individual patients and clinicians decide whether screening colonoscopy should be performed and help avoid its use in patients who are unlikely to benefit substantively. Although not the intent of this study, it would seem a logical extension of this conclusion to apply these data to when to discontinue colon polyp surveillance in patients as they enter into "elderly" status (≥ 80 years of age). Any decision to limit follow-up colonoscopy should be with full disclosure to the patient and his/her agreement with the rationale and assessment of the overall risks.

Abstract

Table. Prevalence of Neoplasia

<table>
<thead>
<tr>
<th>Age Range (years)</th>
<th>Prevalence</th>
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<tbody>
<tr>
<td>50-54</td>
<td>13.8%</td>
</tr>
<tr>
<td>75-79</td>
<td>26.5%</td>
</tr>
<tr>
<td>≥ 80</td>
<td>28.6%</td>
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