CORRESPONDENCE

Cost-Effectiveness of Colorectal Cancer Screening With Computed Tomography Colonography

The Impact of Not Reporting Diminutive Lesions

We were disappointed that many critical assumptions in the article regarding the cost-effectiveness of computed tomography colonography (CTC) by Pickhardt et al.[1] are not in keeping with the literature, leading to incorrect conclusions.

First, CTC accuracy for "polyps" is used, whereas the authors use prevalence for "adenomas" (15%). The prevalence of adenomas is reported to be half that of polyps in prospective trials; therefore, the authors have artificially halved the post-CTC colonoscopy costs. In an earlier study by Pickhardt et al.,[2] 30% of patients were found to have positive CTC findings (using a threshold of >6 mm), with 42% of polyps being adenomas. In addition, CTC positivity (ie, which patients are sent for colonoscopy) is dependent on per-patient, not per-polyp, specificity. Finally, the polyp specificity of CTC that was modeled by Pickhardt et al. (86%) is inappropriate; it is not size-independent, and 86% is higher than even the best performance noted (80% for a threshold >6 mm).[2] The model also needs to acknowledge that polyp removal with CTC depends on 2 sequential false-negative rates: that of CTC, then colonoscopy. Finally, reducing the Surveillance, Epidemiology, and End Results program (SEER) incidence by 25% (as shown in Figure 2 in the referenced article) is not the appropriate "correction" for 75% of the population being at average risk.

The assumed rate of perforation during diagnostic screening colonoscopy (1 in 500) is at least double that of the published rate. Equally, the *cancer* sensitivity for colonoscopy is not 95%, implying that 1 in 20 cancers are missed routinely on colonoscopy. Furthermore, a 1-in-10 false-positive rate for polyps with colonoscopy with biopsy and/or polypectomy (ie, 10% of polyp-free patients were told they had polyp removal on histology) is ridiculous; the costs/risks of polypectomy are included, so one needs to acknowledge the near-100% specificity of histology.

The interval for repeat testing is only provided once (10 years) in the article by Pickhardt et al.,[1] which, especially for patients with ≥3 polyps, goes against the guidelines of the American Cancer Society and is inconsistent with Figure 1B, which shows "intensive" (undefined) follow-up for the detection of 6-mm to 9-mm polyps detected on CTC. Lastly, postpolypectomy surveillance (even if the patient was originally screened with CTC) should be performed with colonoscopy. Is that modeled?

Lastly, are small polyps ignored in both treatment arms, or just in the CTC arm? If ignoring small polyps is a medical decision (one with which many physicians simply do not agree),[3] then why not apply it to both treatment arms? Other clinically insignificant imaging findings (simple liver/renal cysts) *are* reported. "Not reporting" is simply unethical, and an inappropriate way of improving cost-effectiveness. How do you survey a "not reported" lesion? One cannot even retroactively examine the appropriateness of this approach.

REFERENCES

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DOI 10.1002/cncr.23125
Published online 19 October 2007 in Wiley InterScience (www.interscience.wiley.com).

Note: The authors of the original article were given the opportunity to respond to this letter and chose not to.