Special report: critical appraisal of CT colonography cost-effectiveness analyses

BlueCross BlueShield Association

Record Status
This is a bibliographic record of a published health technology assessment. No evaluation of the quality of this assessment has been made for the HTA database.

Citation

Authors' objectives
To review and critically appraise cost-effectiveness analyses of CT colonography, specifically to compare CT colonography and colonoscopy.

Authors' conclusions
Due to differing assumptions, current cost-effectiveness studies vary in their evaluation of the comparative costs and effects of CT colonography and colonoscopy with currently available data and practice guidelines. Overall benefit without consideration of costs appears to be similar between the two tests regarding colon cancer prevention. Most studies did not consider the potential benefits of aortic aneurysm detection and extracolonic cancer detection. CT colonography was generally more expensive and in many studies less effective as a screening strategy than colonoscopy, and in other studies only slightly more effective. Thus it generally was either dominated by colonoscopy or had a very unfavorable incremental cost-effectiveness ratio.

Depending on the study, at a cost of CT colonography relative to that for colonoscopy within the range of 0.22 to 0.52, CT colonography had reasonable incremental cost-effectiveness ratio compared to colonoscopy. The relative costs of CT colonography and colonoscopy are extremely critical parameters for this analysis. None of the aforementioned studies included the costs of anesthesia; costs for colonoscopy may be particularly high when anesthesiologists provide pain control. More solid information is needed on the relative costs of the two procedures.

Only one study incorporated health benefits of aortic aneurysm detection, extracolonic cancer detection, and long-term radiation effects. This benefit was calculated to account for up to 20% of the total health benefit achieved. Most of the benefit was estimated to be from early detection of aortic aneurysms. Screening for aneurysm using ultrasound has been demonstrated to be effective in older (i.e., age 65 or older) men and has been recommended for older male smokers. Screening for the other cancers assumed to be detected has not been shown to be effective. Further research is needed to bolster the data supporting considerable benefit of CT colonography regarding aortic aneurysm, especially in older individuals, and extracolonic cancer detection, as well as the costs and potential health risks of false-positive findings.

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