Screening for colorectal cancer: virtually there

A national rollout of faecal occult-blood screening, federally funded, is the best approach

Bowel cancer is Australia's commonest internal cancer.[1] There is indisputable evidence that population screening with faecal occult-blood testing (FOBT), allowing early detection of cancer and detection and removal of the precursor adenomatous polyp, could save close to 2000 lives each year.[2] The federal government is to be commended on its orderly approach to the issue through the Bowel Cancer Screening Pilot Programme (www.cancerscreening.gov.au/bowel/). It is important that this commitment to colorectal cancer screening continues, given also its clear cost-effectiveness.[3-6]

But what about other methods of screening? Arguments centre on whether we need evidence from meta-analyses of multiple randomised-controlled trials (RCTs) of screening showing mortality reduction before recommending a particular method, or whether less rigorous proof will suffice. Colonoscopy has the highest level of sensitivity and specificity for detection of colorectal neoplasia, but there are no RCTs of screening using colonoscopy, let alone any meta-analyses. Because the FOBT trials have shown a link between a favourable shift in staging and mortality reduction in populations invited to participate in screening, the standard of proof for considering any screening program to be effective can now be the less stringent demonstration of a favourable shift in staging compared with controls. But, without controlled trials, even that information is unavailable for colonoscopy.

Colonoscopy is not without risk, with rates of postpolypectomy transfusion requirement, perforation and death being 1 : 500, 1 : 1000, and 1 : 10 000, respectively.[7] These complication figures may be too high when applied to the more robust screening population, but they nevertheless underpin the need to be careful before advocating an invasive screening procedure for a healthy population. Flexible sigmoidoscopy is another option, supported by level III evidence and some cost-effectiveness calculations. Controlled trials of flexible sigmoidoscopy are ongoing.

So what about computed tomography (CT) colonography (virtual colonoscopy)? Great expectations have been generated by the lack of need for sedation, a low complication rate, short examination time, safety (apart from radiation[8]), and potential (not yet actual) avoidance of the need for bowel preparation. In the best centres, the sensitivity and specificity for neoplasia detection is equal to conventional colonoscopy, and it is cheaper.[9,10] However, once it is positioned beyond its dedicated pioneers, the performance becomes less certain.[11] The Royal Australian and New Zealand College of Radiologists has reservations about its widespread implementation for screening (Clinical Associate Professor Richard Mendelson, Colorectal Cancer Reference Group Member, RANZCR, personal communication). For best results, the hardware needs to be advanced (eg, 16-detector spiral scanners), the software optimised (providing three-dimensional endoluminal "fly through" views), scans obtained in supine and prone position, and the radiologists skilled and experienced.[12] Conventional colonoscopy is needed to confirm and remove detected lesions (in an Australian study, 27% of participants needed colonoscopy[13]). Managing the small polyps found by CT colonography, which many would consider an incidental finding of minimal risk, inflates the necessity for colonoscopy both immediately and at follow-up. The chance that two bowel preparations will be required is unpalatable, partly explaining the lack of preference for virtual over actual colonoscopy.[14] Having both procedures after one bowel preparation is possible but difficult to organise. Finally, there is not level I, II or even III evidence for cancer mortality reduction or stage shift with CT colonography.

Determining an individual's best screening strategy involves assessing familial and personal risk factors, and age-specific risk for colorectal cancer for the 5- to 10-year period over which colonoscopy affords protection against the risks of screening. FOBT is advocated in average-risk people aged 50–75 years, based on RCT evidence, validating taxpayer funding. Whether the uncertainty (with respect to risks versus benefits) of more invasive screening is acceptable becomes an individual choice. The "What would *you* do, Doc?" question, which is often personality rather than evidence driven, may tip the balance.

> But who pays? There is no Medicare rebate for almost all screening in Australia, and definitely not for bowel cancer.

In the United States, colorectal cancer screening guidelines emphasise "choice"[15] — "Just do something". Participation in population screening is very important, but whether offering "choice" improves rather than paralyses participation is uncertain.

But who pays? There is no Medicare rebate for almost all screening in Australia, and definitely not for bowel cancer. Indeed, the Medicare-rebatable FOBT strategy is inappropriate for screening for colorectal cancer. It specifies a guaiac and an immunochemical test, a combination that has unknown performance characteristics in screening. For average-risk people, there is certainly no Medicare rebate for any of the more invasive endoscopic or CT screening techniques. All this information needs to be considered in the informed-consent process.

So what *would* you do, Doc? A well organised (rather than once-only) screening program is important. A national rollout of faecal occult blood screening, federally funded, is the commendable approach being tested in the pilot program. But beyond or outside that? I would choose one of the two tests (Bayer "Magstream" or Enterix "!nform") used in the national pilot program — both have adequate performance characteristics for bowel cancer screening — favouring perhaps the Australian "!nform" test because of its associated program of implementation, and ready applicability in general practice.[16] Virtual colonoscopy? Not yet, and certainly not until I have identified a neighbourhood CT facility with performance characteristics equal to the best published to date.[8] Self-funded colonoscopy? No, and certainly not before my risk for colorectal cancer death over 5–10 years overtakes my risk of serious complications from colonoscopy by an order of magnitude — that is, at age 55–60 years.[2] And, for any colonoscopy required in the screening pathway, I would choose a colonoscopist with a good performance "score card" and a licensed centre.

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