Dealing with colorectal cancer in New Zealand

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This edition of the New Zealand Medical Journal features articles about various aspects of colorectal cancer, from screening to diagnosis and treatment. While the disease remains a scourge of the Western World, there is evidence of progress in the way healthcare providers strategize against it.

Colorectal cancer is potentially preventable. Indeed, the adenoma-carcinoma sequence and the average lag phase of 10 years between polyp and cancer offer ample opportunity to remove the premalignant lesion.

Times are changing however. Recently the effectiveness of screening colonoscopy has been questioned, and these questions have provoked an increasing emphasis on colonoscopy quality. In addition, flat adenomas and sessile serrated adenomas/polyps are now recognised as likely causes of interval cancers. Knowledge of the molecular biology of colorectal cancer is impacting clinical care, with tumours now being tested to detect the underlying molecular mechanisms giving rise to the cancer.

All of these issues are touched on in this edition of the Journal. However underlying them is the situation that exists in New Zealand, where limited resources must be husbanded and prioritised and where the ideal approach to minimising the impact of a disease is both unaffordable and impractical.

The aim of colorectal cancer screening is the early detection of cancers, assuming that this will lead to more effective treatment. Large studies using guaiac-based occult blood tests have confirmed this assumption, although long-term follow-up shows that the benefits may not last. Faecal immunochemical testing is considerably more sensitive than guaiac-based tests, and promises to be a practical approach in New Zealand if the barriers of poor patient compliance and lack of access to colonoscopy can be overcome.

Colonoscopy is the only test that provides prevention as well as early detection, but is impractical for population screening. Rather its main use is to diagnose symptoms, and here Kueh et al, in this edition of the Journal, confirm that not all abdominal symptoms have the same significance in diagnosing cancer. In fact, abdominal pain is common, and usually due to functional disorders such as constipation or irritable bowel syndrome. Sanders et al, also in this issue of the Journal, report the development of a symptom and family history derived score that predicts likelihood of cancer. Such complex scoring systems are never user friendly however, and a common-sense approach to symptoms based on knowledge of colorectal pathophysiology is likely to be just as effective. Good clinical acumen is required to triage patients according to the details of their history. The principle of prioritising appointments for diagnostic colonoscopy is appropriate however, when colonoscopy slots are in high demand.
Colonoscopy is also important for screening high-risk patients, where the chances of finding a premalignant polyp are higher than average. The main groups at high risk are those with a family history or a personal history of colorectal neoplasia. Tarr et al report encouraging data on the level of knowledge of patients with a family history of colorectal cancer and their acceptance of colonoscopy as a screening test. Such a high level of patient “buy in” is unusual and promising.

Identification of the ultimate high-risk families, those with Lynch syndrome, is facilitated by tumour testing for evidence of defective DNA mismatch repair. The most cost-effective way is to perform immunohistochemical stains for mismatch repair proteins on resected cancer specimens. The paper by O’Regan et al shows that the practice of limiting analysis to the minor partner in each of the two protein pairs involved will detect most mutator tumours. However they do not pursue the test to its conclusion by excluding cancers with loss of MLH1 due to promoter methylation, nor do they provide the results of germline sequencing of the incriminated gene. These are important steps as identifying Lynch syndrome not only helps the management of the proband, but offers the opportunity to screen relatives, with a potentially huge impact on the well-being of the family.

Other papers in this issue focus on details of colonoscopy performance. It is important that colonoscopy quality standards are set and promulgated, and Fraser et al have performed a comprehensive quality audit over a significant length of time. Their study should represent the best in New Zealand endoscopy, involving experienced consultants and patients away from the public system. Their data show improvement over time in quality indicators such as caecal intubation rate, time of withdrawal and polyp detection, although the lack of adenoma detection rate rather weakens the conclusions that can be drawn from the data. However neither adenoma nor polyp detection are really the point of colonoscopy.

The point is to detect or prevent cancer, or perhaps advanced adenomas as a surrogate for cancer. Unfortunately there are no data to show how well this is done. Also missing are data on complication rates, surely a central data point when discussing quality.

Another colonoscopy study in this issue of the Journal concerns the use of carbon dioxide as an insufflation gas for colonoscopy. While this is not an original idea it confirms the value of using a gas that is readily absorbed across the mucosa of the colon, thus avoiding colonic distension. Unfortunately the authors missed an opportunity to look at other endpoints such as adenoma detection rate. If a colonoscopist is not concerned about painful post colonoscopy colonic distension, he/she can blow the colon up and possibly obtain better views.

Perhaps the most important contribution in this edition is that from Lim et al., who report the outcome of colon and rectal cancer treatment in a retrospective study of 1091 patients from three different time periods. This is important, because in the absence of a national colonoscopic screening programme, colorectal cancer will happen. It may be diagnosed early by faecal occult blood testing but it may also present at a more advanced stage with symptoms.

Hsiang et al show that this is especially likely to occur in Māori and Polynesian communities, a particular cause for concern. Even in Lim’s study, over half of all
patients presented with stage III or IV disease. The primary treatment of colorectal cancer is surgical and many studies have shown that, particularly with rectal cancer, the surgeon influences oncologic outcomes. Lim et al’s data show a trend to increasing participation of consultants as the primary surgeon, and to increasing involvement with medical oncologists and radiation therapists, especially for rectal cancers. While there is marked improvement in cancer specific survival in patients with stage III disease when the early cohort is compared to the more recent cohorts, data on local recurrence, perhaps the most sensitive indicator of quality of treatment, are lacking. The absolute values for cancer-specific survival suggest that there is scope for further improvement, although the entire patient population is elderly (with a mean age of 76 years).

New Zealand faces a difficult problem in colorectal cancer. This is not new. In 1988 I wrote a lead article in the New Zealand Medical Journal entitled Large bowel cancer in New Zealand. While the fundamental issues raised in that article have not changed in 25 years, it is encouraging to see recent progress.

The need for a centralised approach to the disease has been answered by the Government in setting up the Bowel Cancer Programme in 2009, and the call for increased public awareness has been answered by the patients themselves who started “Beat Bowel Cancer Aotearoa” in 2010. However, the conclusions of this editorial are still the same as the conclusions of the lead article written 25 years ago:

- Population colonoscopic screening is not possible and so prevention will not occur.
- Early detection is the best that can be hoped for but even this is not currently available on a programmatic level.
- New Zealanders must rely on family practitioner-based faecal occult blood screening, on accurate family histories to determine level of risk, and on prioritisation of what colonoscopy slots are available to screen those at high risk.

Newer thoughts focus on healthcare personnel and the potential of faecal DNA testing. When colorectal cancer happens, experienced specialists must captain the ship, with a crew that includes oncologists, pathologists and radiation therapists.

Rectal cancer is a special case, where experience and expertise is paramount and treatment by a small cadre of experts in a multidisciplinary clinic is the way to go. For colonoscopy screening, the potential role of nurse endoscopists may be an answer to lack of qualified physician colonoscopists.

Finally, collecting and reporting data, and searching for new solutions to old problems, are key to the future, and are highlighted by this issue of the Journal.

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References: