Gastroenterology: New developments

Dr Herbie Scheider

Much interest has been generated in the last few years with regard to new gastrointestinal imaging modalities. If the new technology is proven to be cost effective, it will further assist in screening for gastrointestinal malignancy, particularly for colorectal cancer, a disease that remains an important cause of morbidity and death.

That there exists a need for colorectal cancer screening is beyond doubt. Persons at "average risk" of colorectal cancer are those aged fifty years or more, with no personal history of colorectal cancer or polyps, and with no first-degree relatives with this disease. This average-risk population has a 6%, or one in fifteen, chance of developing colorectal cancer in their lifetime. Colorectal cancer has no gender preference, so both males and females need to be screened. Those ***with*** risk factors, as outlined above, are at greater risk of developing colorectal cancer.

Currently recommended screening modalities include a colonoscopy every ten years, a flexible sigmoidoscopy every five years, annual or biennial faecal-occult blood testing, a flexible sigmoidoscopy and faecal-occult blood testing or a double-contrast barium enema every five years. New screening methods include CT colonoscopy, MR colonoscopy, capsule colonoscopy and a novel self-propelled, self-navigating colonoscope for diagnostic purposes (Aer-O-Scope®).

Annual or biennial faecal-occult blood testing has been shown to reduce colorectal cancer mortality by 21%. Drawbacks of this method of screening include low compliance rates, high false positive rates leading to colonoscopy with its associated cost, discomfort and complications, and high false negative rates.

A sigmoidoscopy performed every five years has been shown to reduce colorectal cancer deaths by up to two thirds for lesions within reach of the sigmoidoscope. Cancer risk above the reach of the sigmoidoscope has not been reduced. Repeat screening every five years has been shown to be optimal.

An annual FOBT and a five-yearly sigmoidoscopy is yet another method of screening for colorectal cancer. This approach has now been studied in a randomised control trial. Sigmoidoscopy

detected 70% of patients with advanced neoplasia and the addition of a one-time FOBT increased the rate to 76%.

A double-contrast barium enema (DCBE) offered every five years has been used for colorectal cancer screening. DCBE has lower sensitivity than colonoscopy for detecting cancers and large polyps and the examination does not permit the removal of polyps or the biopsy of cancers.

Colonoscopy remains the gold standard for screening, with a total colonoscopy possible in about 97% of patients. The rate of "missed polyps" at colonoscopy may be as high as 6%. The advantage of colonoscopy is the ability to perform a polypectomy at the time of colonoscopy. With the other imaging modalities the finding of a polyp must result in colonoscopy and polypectomy.

Computed tomographic (CT) colonography, also called virtual colonoscopy, is an evolving technology under evaluation as a new method of screening for colorectal cancer. CT colonography is an effective screening test for colorectal neoplasia. However, it is more expensive and generally less effective than optical colonoscopy. Patient preference has been shown in a study to favour optical colonoscopy rather than CT colonoscopy. CT colonoscopy can be reasonably cost effective when the diagnostic accuracy of CT colonoscopy is high, as with primary three-dimensional technology, and if costs are about 60% of those of optical colonoscopy (USA data). Overall, CT colonoscopy technology will need to improve its accuracy and reliability to be a cost-effective screening option.

The Aer-O-Scope® achieved maximal insertion in 80 to 90% of cases in animal studies. No complications were recorded in these studies. Human studies are underway.

In conclusion, there are many new developments in the pipeline for colorectal cancer screening. We must not, however, delay screening programmes in our practices. Screening has the ability to detect polyps before the onset of malignancy and this must be our goal. By the time patients develop symptoms they all too often have advanced disease, making cure unlikely. Patients need to be stratified according to their risk profile and the appropriate screening methods need to be applied

Schneider HR, MBChB, FCP
Private Gastroenterologist
President Africa Middle-East Association of Gastro Enterology