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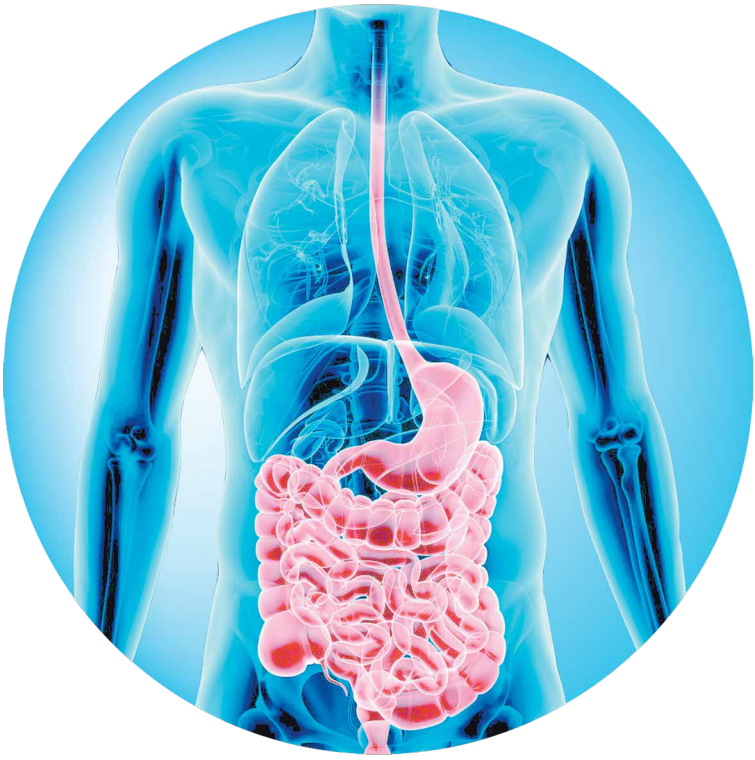
Investigations for Colorectal Cancers



Introduction

Colorectal cancers (CRC) are among the most common cancers in developed countries. In Hong Kong, 1,981 people died from CRC in 2013 [1]. These deaths are *unnecessary* as we now know CRC are largely "preventable"! Most of the CRC in fact develop from adenomatous polyps. So early detection and removal of the polyps would have prevented the disease.

The key question is how these polyps and early cancers can be detected and when should the tests be done.

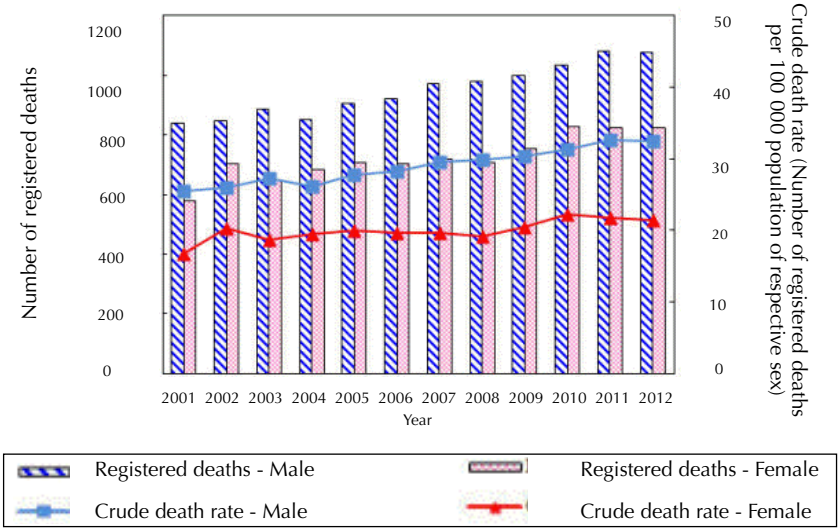
Statistics

Every year there are about 4,400 new cases of CRC diagnosed in Hong Kong [1], and it is the second most common cancers after lung (table 1). It accounts for about 16.4% of all new cases of cancers in Hong Kong. Nearly half of these newly diagnosed cases already are at Stage III or above [2]. Its incidence increases with age and 90% occured in patients aged 50 or above (chart 1).

Table 1: Leading Cancer Types (both genders combined)

Rank	Site	No. in 2010
1	Lung Cancer	4,480
2	Colorectal Cancer	4,370
3	Breast Cancer	3,025
4	Liver Cancer	1,863
5	Prostate Cancer	1,492
	All Cancers	26,390

Chart 1: Age-specific Incidence and Mortality Rates for Colorectal Cancer in 2013



Tests for detecting CRC and adenomatous polyps

An ideal test must be very sensitive to detect the lesions and yet very specific to avoid false positives. It should be simple to perform, non-invasive and relatively inexpensive.

Stool tests

1. Faecal occult blood test (FOBT)

Faecal occult blood test is certainly a simple test to perform. Meta-analysis of randomised controlled trials also suggested that annual or biennale screening by FOBT might reduce CRC mortality by 16% [3,4,5]. However, it has a sensitivity of only 19.1% and specificity of 79.6%. So a lot of cases especially early cases might be missed, and large numbers of false positives will cause anxiety to the patients and lead to unnecessary invasive procedures.

2. Stool DNA test (sDNA)

Recently stool test for tumour DNA (such as ColoSure, Cologuard) is more promising and much more specific than FOBT [6]. In one study, it was shown that sDNA could pick up 42% of adenomatous polyps and 92% colorectal cancers. It has about 13% false positive rate. Unfortunately, these DNA tests are relatively expensive and are not generally available at present.

Barium enema

It provides only indirect visualisation of mucosal lesions. It can miss small polyps and low rectal tumours. The greatest disadvantage is that it is only a diagnostic procedure, not therapeutic.

Virtual Colonoscopy

It is more sensitive than Barium enema in picking up mucosal lesions: 48-93% sensitivity depending on size of the polyps [7,8,9]. It is quite specific at 92-97%. But like Barium enema, it is a diagnostic procedure only.

Colonoscopy

Colonoscopy provides a direct inspection of the mucosal lining of the rectum and colon and therefore abnormalities can be clearly seen. The sensitivity and specificity were

shown to be 90% and 99% respectively [10]. The greatest advantage is that the lesions can be biopsied or removed for tissue diagnosis.

However, doing colonoscopy does need skill, and it might not be possible to go round some bends and certainly would not be able to negotiate a tight stricture. Perforation rate is around 0.1% in general [11], but if performed by experienced endoscopists, the rate could be as low as 0.01%.

Recommendations

1. Symptomatic patients with PR bleeding, anaemia, change in bowel habits, tenesmus: consider colonoscopy. Other symptoms: abdominal mass… CT scan; abdominal pain…clinical evaluation.
2. Asymptomatic patients. Aged 50 or over: colonoscopy. Aged below 50 (without FAP, HNPCC, FH): FOBT, sDNA, virtual colonoscopy.
3. Tumour markers. CEA is only elevated in 60-70% in CRC; it is non-specific (can be raised in many other conditions). Not recommended test for detecting CRC.

References

For the references of this article, please refer to the full version on our website: www.asiamedicalspecialists.hk.

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