

Fecal Occult Blood Testing: Best Option for Colorectal Cancer Screening in Asia?

By Sharan Prakash Sharma

Fecal occult blood testing (FOBT) is the most cost-effective method of colorectal cancer screening in at least some Asian countries, according to a new study from the Chinese University of Hong Kong.

The study, which compared FOBT to two other screening methods, flexible sigmoidoscopy and colonoscopy, highlights the increasing concern about colorectal cancer in a region where incidence of the disease has risen markedly in the past few decades. Colorectal cancer is now the second most common malignancy in many Asian countries, and in some places the incidence, distribution, and mortality rates of the disease are similar to those of the West. This increase may be due to rapidly changing lifestyles and diets. Forthcoming new regional guidelines on colorectal cancer screening reflect the sense of urgency that some experts feel about the upward trends. But in some countries in the region, colorectal cancer incidence remains low, provoking debate on whether screening should be a priority for all.

The new study, published in April in *Alimentary Pharmacology and Therapeutics*, evaluated the cost-effectiveness of screening with FOBT annually, sigmoidoscopy every 5 years, or colonoscopy every 10 years in a hypothetical population of 100,000 people aged between 50 and 80 years who were at average risk

for colorectal cancer. Using the mathematical Markov model, the authors factored in the prevalence of the disease, the cost of screening procedures, compliance rates, and the cost of treatment.

Assuming 90% compliance, and compared with no screening, FOBT required an extra \$6,222 to save an additional life-year; sigmoidoscopy, \$8,044; and colonoscopy, \$7,211. At lower levels of compliance (50% and 30%), FOBT still remained more cost-effective.

The researchers acknowledge that their findings differ from those of some studies in Western countries that have shown colonoscopy to be the most cost-effective screening method. “Our results may seem to be in conflict with the others, but we have some distinct differences in the study that are important to know,” said Joseph J.Y. Sung,

M.D., Ph.D., an author of the study and a professor of medicine at the Chinese University of Hong Kong. “We based our assumptions on data from Asian countries [with a high incidence] like China, Japan, Korea, Taiwan, and we decided to screen from 50 years to 80 years instead of screening until death,” he said. “The most important thing is that our model also incorporated the cost of new chemotherapy regimens for different stages of advanced [colorectal cancer] in the cost analysis.” The last decade in Asia has seen improvement

in colorectal cancer survival rates due mainly to advances in chemotherapy, such as the use of oxaliplatin- and irinotecan-based therapy and targeted therapies.

The Asian findings are consistent with the experience in at least one country outside the region. In Israel, the average-risk population is screened with FOBT, and, according to Gad Rennert, M.D., Ph.D., head of the country’s breast and colorectal cancer detection program, the test has a high detection rate and is cost-effective. Rennert noted that Israel uses an immunochemical test that has a higher sensitivity than the guaiac-based test used in the Asian study. Had data from immunochemistry entered the model, he said, the result would have been even more dramatic.



Joseph J.Y. Sung,
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Obstacles to Screening

Although the study concluded that FOBT is more cost-effective than other screening methods in Asia, there is less certainty about how to implement colorectal cancer screening. The more than 50 countries of the Asia-Pacific region have diverse ethnicities and various rates of colorectal cancer incidence. Rates are high, for example, in Japan, Taiwan, and South Korea but are still low in southeast Asian and south Asian nations. Throughout the region, public awareness of colorectal cancer is extremely low, and screening programs are at a nascent stage.

In another study, Sung and colleagues analyzed obstacles to colorectal cancer screening in China. Published in the *American Journal of Gastroenterology* in April, the study showed that colorectal

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cancer testing compliance is low and that people know little about the symptoms, risk factors, or ways to prevent the disease. It also found that higher health insurance coverage was associated with higher screening rates.

Increasing health insurance coverage, however, is a daunting challenge in Asia. In most countries in the region, health care is self-financed. In those that have national health insurance, the plans typically cover only a fraction of the total cost. For example, in Korea, the government covers just half the costs of colorectal cancer screening.

Taiwan is the only country with free mass screening for colorectal cancer under a national health insurance program. In a few other countries, colorectal cancer screening is endorsed but not funded. Most countries have no formal screening program.

Likewise, national guidelines on colorectal cancer screening are nonexistent in most Asian countries. Only Japan, Korea, Taiwan, and Singapore have them. In the rest of the region, tests are done haphazardly or as the opportunity arises, said Hsiu-Po Wang, M.D., associate professor of internal medicine at the National Taiwan University in Taipei.

Guidelines

Wang hopes that establishing guidelines will improve the situation. The Asia Pacific Working Group on Colorectal Cancer, led by Sung, held a consensus conference in September 2007 in Hong Kong with representatives from 14 Asia-Pacific countries. The guidelines that emerged from the conference—which will be published in *Gut*—call for screening with colonoscopy, sigmoidoscopy, and FOBT but emphasize that FOBT should be the first choice for screening in resource-limited countries. The conference also concluded that colorectal cancer screening should be made a national health priority in most Asian countries.

“The chaotic situation of [colorectal cancer] screening will change with the publication of this paper,” Wang said. “The guideline will clear the confusion by providing solid and clear consensus so that the best use of limited resources and manpower can be made in Asia.”

However, a national screening strategy may not be a must for all countries of the region, such as those with a low colorectal cancer incidence, said Rengaswamy Sankaranarayanan, M.D., head of the screening group of the International Agency for Research on Cancer in Lyon, France. “When considered globally, South East Asia and South Central Asia have a very low incidence of [colorectal cancer],” he said. “So opportunistic screening may be accepted in these regions. Mass and organized screening for [colorectal cancer] is valid only in countries where its incidence is high enough and should not be recommended to the health authorities for countries where the incidence is low.”

The working group thinks otherwise. The low-incidence countries of Asia, where screening is not an immediate need, may experience an increase in colorectal cancer incidence in the future as diets and lifestyles change, Sung said. He believes that these countries need to prepare now to effectively tackle the disease in the future.

Sung acknowledged that a one-size-fits-all hypothesis is not likely to be of much help, given the region’s diverse health systems and needs coupled with the intricate issues surrounding colorectal cancer screening in Asia. However, he added, “certainly there is a need for more studies. Ideally every country in the region, including those where [colorectal cancer] screening policy is not a pressing need now, should conduct cost-effectiveness analyses to identify the most effective and affordable method of ... screening for its populations.”