S25. Screening of Colorectal Cancer: Progress and Problems

S. Winawer

Memorial-Sloan Kettering Cancer Center, Weill Medical College, New York, NY, United States of America

There will be approximately 10 million new cases of cancer worldwide this year with more than 6 million deaths. Of these cases digestive cancers as a group (colorectal, gastric, esophageal, pancreas, and liver) account for the highest incidence and mortality worldwide with 3 million new cases and more than 2 million deaths. Among the digestive cancers, colorectal cancer has the highest incidence and the best ratio of cases to death, which demonstrates the high burden on society of colorectal cancer as well as the potential for cure. The number of colorectal cancer cases, is projected to increase significantly in the next few years both in developed countries and developing countries. Considerable progress has been made in the prevention of colorectal cancer. The long natural history of colorectal cancer as it evolves from a normal mucosa through the adenoma stage provides a window of opportunity for the early detection of a high proportion of curable cancers and for prevention of cancers completely by polypectomy and by primary prevention approaches. There is now considerable evidence that colorectal cancer screening is both effective and cost effective in reducing the incidence and mortality of this disease. Since 1996 many international groups have evaluated the evidence and recommended guidelines which state that all men and women age 50 and over should be screened for colorectal cancer and adenomatous polyps, and younger in the presence of factors that increase their risk. Several options for screening are now available including fecal occult blood testing (FOBT) by guaiac or immunochemical methods, flexible sigmoidoscopy, barium enema, and colonoscopy. The strength of evidence varies considerably among the options. It is strong for FOBT with 3 reported randomized trials showing mortality reductions, intermediate for sigmoidoscopy with case control studies completed and weakest for the barium enema. Although colonoscopy screening has no mortality data and only performance data, it has become an attractive approach because screening diagnosis, biopsy, and removal of polyps can be done with one test. It is a safe test, complications being associated primarily with polypectomy rather than with only screening (0.1%). Removal of polyps has been report in several studies to reduce cancer incidence (by 66-90%) regardless of the method that results in the detection of polyps. There are many issues regarding which screening tests to implement. Screening colonoscopy is the most sensitive and specific but requires the most resources and may not be feasible in most countries. A two-stage screening with either FOBT or flexible sigmoidoscopy or both as a first step could be used to identify a smaller subset of the population requiring colonoscopy. Emerging technology has also been introduced recently including stool DNA mutation testing and virtual colonoscopy. Data indicates a sensitivity of stool DNA testing of approximately 50% for cancer and advanced adenomas, and about 90% for large adenomas (>1cm) for virtual colonoscopy. These tests require further study. A major issue is that population screening rates are low and most people do not take advantage of the benefits of screening. In one study less than 40% of at risk people had a screening test in the past 5 years. An international survey demonstrated that there are multiple system and patient barriers to screening, the most important being patient awareness and financial obstacles. We can debate the virtues of each screening test but the best test is the one that gets done. Screening needs to be incorporated into a program of prevention that includes lifestyle modification, assessment of familial risk factors, and chemoprevention where appropriate. Modest benefit has been shown with supplemental calcium, aspirin and multivitamins that contain folate as well as diet and lifestyle modifications.