and cardiovascular risk reduction, biomedical research into indigenously developing affordable CPAP machines is perhaps the need of the hour.

REFERENCES


Colorectal cancer: Do we now have a definitive screening tool?

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SUMMARY

The PLCO (Prostate, Lung, Colorectal and Ovarian Cancer Screening) Trial is a large, population-based, randomized controlled trial designed and sponsored by the National Cancer Institute of the USA to determine the effect of screening on cancer-related mortality and other secondary end-points in men and women aged 55–74 years. The
screening component of the trial was completed in 2006 but followup will continue till 2015. Schoen and co-workers have reported the results of flexible sigmoidoscopy as a screening tool in this paper. For the colorectal screening component, participants were randomly assigned to two groups. About 71,000 participants were randomized to each arm. The first group was offered standard of care while the second group had a flexible sigmoidoscopy at enrolment and a repeat flexible sigmoidoscopy at 3 or 5 years (depending on the year of enrolment). The participants were carefully selected to prevent any bias by excluding individuals with a history of prostate, lung, colorectal or ovarian cancer or individuals who had had an evaluation of their lower gastrointestinal tract (flexible sigmoidoscopy, colonoscopy or barium enema) within 3 years of enrolment. The participants were carefully followed up with regular questionnaires. Intensive efforts were made (detailed questionnaire) to ascertain contamination (colonoscopy and sigmoidoscopy outside the study) among the participants and was accounted for. Death from colorectal cancer was the primary end-point and colorectal cancer incidence, stage, survival and complications of screening were the secondary end-points.

There was a 26% reduction in all colorectal cancer-related mortality in the screening group. Mortality related to distal colorectal cancer was reduced by 50%; this was statistically significant. The mortality related to proximal cancers did not show any significant change due to screening. The number needed to invite for screening to prevent one colorectal cancer death was 871 (95% CI 567–1874). A 21% reduction in the incidence of colorectal cancer was shown in the screened group. This reduction was found in both proximal and distal cancers, across all age groups. The number needed to invite for screening to prevent 1 case of colorectal cancer was 282 (95% CI 210–427).

COMMENT
Colorectal cancer is one of the leading causes of death in the world due to cancer, contributing to about 8% of cancer mortality.1 Screening has been shown to reduce colorectal cancer mortality and incidence. Screening tests for colorectal cancer comprise a wide spectrum of tests from the inexpensive and easily accessible faecal blood testing to the expensive and invasive colonoscopy.2

The UK flexible sigmoidoscopy study assessed the effects of one-time flexible sigmoidoscopy as a screening test among 55–74 year-old persons for colorectal cancer. The trial showed a reduction of 23% and 41% in the incidence and mortality of colorectal cancer among screened individuals, respectively.3

A similar study done among the Italian population studied the effect of one-time flexible sigmoidoscopy as a screening tool at around the age of 60 years. It also showed a decrease in incidence (31%) and mortality (38%) of colorectal cancer among the screened group.4

This study, which is part of the PLCO trial, is a well-conducted, randomized controlled trial. It is well planned with a good follow-up and adequately powered to ascertain the difference between the control and the study group. The statistical analysis used is appropriate. The study has shown an initial rise in the incidence of colorectal cancer followed by a drop in incidence. This is a characteristic of a good screening test, as it initially picks up the disease present and then helps to decrease the incidence. It has also gone on to do exactly what it intended to do: it significantly decreased the incidence and the mortality associated with distal cancers. As the flexible sigmoidoscope only visualizes the distal colon, this makes logical sense and proves the validity of the study.

The study has raised a few issues which have not been resolved. A screening test in itself will not reduce the incidence of cancer, but the intervention followed by it does. What interventions followed after screening, and the diagnostic pathway followed, have not been made clear in the publication. In addition, what ‘standard of care’ entails has not been clarified. Thus, it may be difficult to reproduce this study in a different setting and to accept the results of this study universally.

The bowel perforation rate among the screened individuals was 2.8 per 100,000 which is well within acceptable limits.5 There was a rate of 107.5 per 100,000 perforations in the subsequent diagnostic or therapeutic colonoscopies in screening positive individuals, which was inordinately high.

Flexible sigmoidoscopy is a useful screening procedure due to its ability to detect premalignant and malignant lesions in the distal colon and rectum, and its potential to be both diagnostic and therapeutic.6 However, long waiting lists, the bowel preparation required and the small risk of perforation are logistical problems that often preclude its use as a mass screening tool.7

Though a definite decrease in incidence and colorectal cancer-related mortality among individuals being screened by a flexible sigmoidoscopy has been shown in this study, it will be a while before this can be accepted as a primary screening tool.

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