Australia has the highest incidence of colorectal cancer (CRC) in the world, with approximately 15 000 new cases and 4 000 deaths per year.

In 2006, a partial roll-out of the national bowel cancer screening program (NBCSP) using faecal occult blood testing was introduced, with free screening offered to a small proportion of the eventual target of all 50-74 year olds biennially. The complete roll-out is due in 2020.

We aimed to estimate CRC screening practices and their consistency with national screening guideline recommendations from 2009-2012. This is approximately midway through the introduction of the program in Phase II, 2008-2014.

Methods

We used a population sample from the Australasian Colon Cancer Family Registry (ACCFR, N=24 422), a large case-control family study and part of an international consortium funded by the United States National Cancer Institute, designed to address specific research questions of colorectal cancer etiology. Details of the method have been reported elsewhere [1,2]. In brief, participants were recruited via population-based case-probands and population-based control probands. Between 2009-2012, cohort participants completed a questionnaire on family history and reported colorectal cancer screening in the past five years.

Based on their age and their family history of CRC, 2 714 participants were categorised as 'at or slightly above average risk', 'moderately increased risk', or 'potentially high risk' according to the Australian National Health and Medical Research Council (NHMRC) guidelines. Based on their reported mode and frequency of screening, we calculated the proportions of participants who were under- and over-screening according to the NHMRC guidelines.

We performed logistic regression analysis to evaluate associations between the participants’ sociodemographic characteristics and screening participation.

Results

Of 970 participants classified as 'at or slightly above average risk' of CRC, 388 (40%) were screening appropriately (per guidelines); 416 (43%) were under-screening (less screening than recommended by guidelines including no screening), and 126 (13%) were over-screening (more screening than recommended by guidelines, mainly by colonoscopy).

Of 1 155 participants at 'moderately increased risk', 323 (28%) were screening appropriately; 728 (63%) were under-screening, 104 (9%) were over-screening.

Of 589 participants at 'potentially high risk', 218 (37%) were screening appropriately, 371 (63%) were under-screening. No participants reported over-screening.

Of the participants categorised as 'at or slightly above average risk' of CRC, middle-aged participants (60 to 59 years), those with a family history of CRC (defined as one first-degree relative diagnosed after age 50) and those with tertiary education were more likely to be over-screening.

For participants categorised as 'moderately increased risk' or 'potentially high risk' of CRC, middle-aged participants, those with tertiary education and those who had resided in Australia longer (10 years vs. <10 years) were more likely to engage in appropriate screening.

Conclusion

Overall, across all risk categories, appropriate CRC screening participation levels during the partial roll-out of the NBCSP were low. However, participation levels were an order of magnitude higher compared with the same cohort a decade ago and prior to the NBSCP [1,2].

The proportion of people receiving appropriate screening was lower than the proportion under-screening (including not screening), with an overall average of 35%.

We identified substantial over-screening in these participants. This was most evident among middle-aged, tertiary educated and long-term Australian residents (these data not shown here).

This suggests that guidelines for CRC screening are not being well implemented in the population.

Implications for Clinical Practice

Our research supports more effective screening strategies: to improve screening participation for all individuals, appropriate to their level of risk.

References


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