

- Title** Colorectal Cancer Screening Using Colonoscopy and Economic Evaluation
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Aim

The aim of this review and economic evaluation is to assess the safety, efficacy/effectiveness and cost-effectiveness of screening asymptomatic population aged 50 to 65 years old for colorectal cancer using colonoscopy. The economic evaluation estimated the cost effectiveness of colorectal cancer screening using colonoscopy or iFOBT + colonoscopy compared with no screening.

Conclusions and results

Fourteen articles retrieved from the electronic scientific databases which consist of one systematic review with meta-analysis, two systematic review, one randomised controlled trial and ten observational studies to demonstrate the safety and efficacy/effectiveness of screening for colorectal cancer using colonoscopy. In addition, three systematic review of cost-effectiveness analysis and one cost utility analysis were also retrieved from the electronic scientific databases. Based on the review, there were fair to good level of evidence that suggest the efficacy/effectiveness of colonoscopy as a colorectal cancer screening modalities for asymptomatic population. Evidence showed that screening of colorectal cancer using colonoscopy was able to detect lesions and colorectal cancer and subsequently reduce the colorectal cancer incidence and mortality. The risk of incidence and mortality was shown to be reduced by approximately 60-70% after screening was done using colonoscopy. Furthermore, the numbers of advanced and non advanced adenomas detected were higher when asymptomatic adults were screened using colonoscopy compared with faecal immunochemical testing. Colonoscopy has also shown to have better detection of advanced neoplasia in proximal colon. However, limited good level of evidence showed that there were a small number of serious adverse events that have been reported such as perforation and major bleeding.

Quality assurance of colonoscopy procedure also plays an important role when considering implementation of colonoscopy for colorectal cancer screening. There was evidence to show that there was a range of performance levels by as gastroenterologist in performing the colonoscopy. Several factors affect the quality of colonoscopy namely adenoma detection rate, withdrawal

times, bowel preparation and bleeding/perforation rates are highly dependent on the individual skills and services provided by the facilities. It is important to ensure sufficient training is provided to the gastroenterologist or other healthcare personnel who perform colonoscopy as evidence indicates that reduction of CRC incidence and mortality are inter-related with the quality of colonoscopy procedure.

Based on the economic evaluation, iFOBT + colonoscopy is suggested to be cost-effective when compared with no screening or colonoscopy with an estimated ICER of RM9, 377.65.

Recommendations (if any)

The iFOBT + colonoscopy may be considered as an option of screening strategy for colorectal cancer in asymptomatic Malaysian population aged 50-65 years old.

Methods

Systematic electronic scientific databases search were conducted using OVID interface; Ovid MEDLINE® In-process and Other Non-indexed citations and Ovid MEDLINE® 1946 to present, All EBM Reviews: Cochrane Database of Systematic Reviews 2005 to June 2016, EBM Reviews ACP Journal Club 1991 to May 2016, EBM Reviews - Database of Abstracts of Reviews of Effects 1st Quarter 2016, EBM Reviews - Cochrane Central Register of Controlled Trials May 2016, EBM Reviews - Cochrane Methodology Register 3rd Quarter 2012, EBM Reviews - Health Technology Assessment 2nd Quarter 2016, EBM Reviews - NHS Economic Evaluation Database 1st Quarter 2016 and EMBASE

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