Abstract

Research Project: Economic evaluation of colorectal cancer screening among Thai population

Objective: To evaluate the cost-utility of various colorectal cancer screening options among Thai population compared with current situation of no screening.

Method: This is a cost-utility analysis using decision tree and Markov model to estimate cost (Thai Baht) and health outcome (quality-adjusted life-year; QALY) presented as incremental cost-effectiveness ratio (ICER) of 1) current situation of no screening; 2) colorectal cancer screening among Thai general population using Fecal immunochemical test (FIT) as primary screening method every 1, 2, 5, 10-yerar or once in a lifetime staring at age of 40, 45, 50, 55, 60 or 65 and ending at age of 60, 65, 70 or 75 years ; 3) colorectal cancer screening among persons at increased risk with a family history of colorectal cancer in first-degree relatives using colonoscopy (COL) as primary screening method every 5, 10-yerar or once in a lifetime staring at age of 40, 45, 50, 55, 60 or 65 and ending at age of 50, 55, 60, 65, 70 or 75 years.

Results: The analysis identified 10 cost-effective and efficient screening strategies out of 119 different optins i.e. colorectal cancer screening among persons at increased risk with a family history of colorectal cancer in first-degree relatives using COL as primary screening method once in a lifetime at age of 60 or 55 years, or 10 yearly from 50-60, 45-65 years, or screening among Thai general population using FIT as primary screening method biennially at age 50-70, 45-65, 45-70, 45-75, 40-70, or 40-75 years.

Conclusion At the ceiling threshold of social willingness to pay of 160,000 Thai-Baht, the most likely fesible screening strategy among 10 selected options that should be introduced is to screen persons at increased risk with a family history of colorectal cancer in first-degree relatives using COL as primary screening method once in a lifetime at age of 60 years (ICER = 18,300). The budget impact of introducing the program is 200 million Thai-Bath per year leading to prevention of around 464 cases of colorectal cancer yearly.

Key words cost-utility, colorectal cancer screening, Thai population, average risk for colorectal cancer, increased risk with a family history of colorectal cancer

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