Cost-effectiveness of screening for colorectal cancer in Argentina

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Abstract

In Argentina, colorectal cancer (CRC) represented in 2012 the country’s second cause of death due to cancer (11.7% out of total malign tumors), after lung cancer and before breast cancer. Trend points at higher levels of incidence in the future, given national habits in life style, such as higher obesity rates, elevated consumption of red meats, low consumption of fruits and scarce exercise. The study –implemented after requirement of the National Cancer Institute (INC) - shows the results of a cost-effectiveness evaluation based on two alternative mechanisms: annual faecal immunochemical testing (FIT), and colonoscopy every ten years in Argentina. The goal of these screening programs is to early detect the original lesion (advanced adenoma), allowing the application of accurate treatments in the search of increasing survival probabilities. The study develops a Markov model in ten stages, based on information provided by the INC, prior literature review and on-line questionnaires to physicians enrolled in the four major scientific societies related to cancer. Cost information arrived from the National Superintendence of Social Health Insurances and a sample of managers in social and private insurance schemes. The estimated model suggests that FIT annually applied becomes the most cost-effective screening method for CRC, in comparison with both no intervention and just colonoscopy. The incremental cost-effectiveness for annual FIT screening is USD 220.- per quality-adjusted life years (QUALY) against no-intervention, and the cost-effectiveness ratio is low and acceptable considering the WHO criteria (per capita GDP), in comparison to the cost-effectiveness ratios of other cardio-vascular preventive interventions prices in Argentina. Results of cost-effectiveness analyses are often strong associated to disbursements related to specific performance indicators, such as the challenges of implementing such initiatives under budget constraints and/or availability and quality of equipments and human resources. These aspects were considered in the implementation of different scenarios in the sensitivity analysis, which includes adherence to treatments and capacity of accurate diagnoses, providing strength to the output reached in the research.

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