COST-EFFECTIVENESS OF A EUROPEAN COMMUNITY-BASED INTERVENTION*:10,000 STEPS GHENT**

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OBJECTIVES: Physical inactivity is linked with inverse health effects and chronic disease. The aim of this study was to evaluate the cost-effectiveness of the European community-based project: “10,000 Steps Ghent.” A published comparative controlled trial was conducted to determine if the intervention resulted in a significant decrease in sedentary time and a significant increase in step counts (896 steps/day) and self-reported walking time (66 minutes/week). METHODS: A Markov model, with a time horizon of 20 years and a cycle length of 1 year was designed in Excel to estimate the development of diabetes, cardiovascular events, and colorectal cancer. All individuals start in a healthy state free of events. The model transitions were age-dependent and based on epidemiological data. The effect of the intervention was based on published relative risk reductions (RRR) related to increased walking time. Costs (from a public payer perspective) and utility decrements related to events were obtained from published literature. To assess the impact of the uncertainty of the parameters on incremental costs and QALYs, one-way sensitivity analyses and a Monte Carlo simulation were performed. RESULTS: Implementing the community-based program increased average QALYs with 0.14 to 12.50 QALY and decreased the total costs with approximately €490 to €749. Hence, the intervention program was dominant. One-way sensitivity analyses indicated that relative risk reductions had the most pronounced effect on the incremental QALYs and costs, however without changing the conclusion of dominance. The results of the Monte Carlo simulation were as follows: the intervention was cost-effective given a threshold value of $100,000 per QALY was over 98% in all scenarios.

RECOMMENDATION: The test and treat strategy with gefitinib involves EGFR mutation testing prior to treatment, followed by selective gefitinib treatment of EGFR+ patients and doublet chemotherapy for EGFR- patients and patients with unknown mutation status, and is compared to treating all patients with doublet chemotherapy without mutation testing. METHODS: A Markov model was developed to integrate IPASS study data with external data on costs and quality of life. The model estimated costs and QALYs from a lifetime horizon for each treatment strategy. The key clinical data inputs were retrieved from the literature. RESULTS: The test and treat strategy, including gefitinib, was associated with a QALY gain of 0.0116 at an incremental cost of $300 yielding a cost per QALY gained of $25,900. CONCLUSIONS: This cost-effectiveness analysis of the IPASS study demonstrates that testing patients for EGFR status, followed by gefitinib treatment for EGFR+ patients is a cost-effective option compared to treating all patients with doublet chemotherapy in a Swedish setting.