PCN98

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 showed that 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 health-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 analysis 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 €2749. 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 analysis were favorable as well and the intervention, based on 5000 simulations, remained dominant. **CONCLUSIONS:** The community-based "10,000 Steps Ghent" campaign is a dominant intervention. Sensitivity analyses have proved the robustness of the results; hence, implementing this intervention on a population-based level could lead to improved health outcomes and reduced costs.

PCN99

COST-EFFECTIVENESS OF IMATINIB AS ADJUVANT TREATMENT FOR RESECTED GASTROINTESTINAL STROMAL TUMORS (GIST) VERSUS BEST SUPPORTIVE CARE: CANADIAN PERSPECTIVE

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OBJECTIVES: Clinical studies have highlighted the high risk of recurrence following complete resection of primary GIST. Published data from the phase III (ACOSOG Z9001) trial have demonstrated significant clinical benefit with adjuvant imatinib versus placebo with respect to recurrence-free survival (RFS 98% vs. 83% at 1 year). We conducted a health economic evaluation for imatinib as adjuvant therapy for GIST that can be used to support this indication. **METHODS:** A Markov model was used to project lifetime outcomes and costs for patients who undergo complete gross resection of primary GIST. Cost-effectiveness was measured in terms of the incremental cost per quality-adjusted life-year (QALY) gained with the addition of imatinib. Probabilities of disease recurrence, resource use, utilities, and costs were derived from ACOSOG Z9001 trial and other secondary sources. Results were generated under three scenarios regarding the treatment duration with imatinib: 1-year, 3-year, and continuous treatment with imatinib. **RESULTS:** Adding imatinib was projected to result in a gain of 0.745, 1.538, and 5.180 QALYs assuming 1-year, 3-year, and continuous treatment scenarios, respectively. These clinical benefits of imatinib are obtained at an additional expected per-patient lifetime cost of $30,042, $81,125, and $345,360 assuming 1-year, 3-year, and continuous treatment scenarios, respectively. The incremental cost per QALY gained with imatinib was therefore $40,328, $52,760, and $66,669 assuming 1-year, 3-year, and continuous treatment scenarios, respectively. Deterministic sensitivity analyses showed the results to be robust with respect to variations in assumptions and estimates. The probability that imatinib is cost-effective given a threshold value of $100,000 per QALY was over 98% in all scenarios. **CONCLUSIONS:** Results of this evaluation suggest that, from a Canadian health-care system perspective, imatinib is cost-effective and represents good value for the money according to currently accepted standards of cost-effectiveness.

PCN100

COST-EFFECTIVENESS OF GEFITINIB VERSUS DOUBLET CHEMOTHERAPY IN FIRST-LINE TREATMENT OF NON-SMALL CELL LUNG CANCER (NSCLC) IN SWEDEN

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OBJECTIVES: The IPASS study (NCT00322452) showed that in patients with EGFR mutation-positive tumors (EGFRm+), gefitinib significantly increased progression-free survival (PFS) compared with doublet chemotherapy, reducing the risk of progression by 52% (HR 0.48, 95% CI 0.36 to 0.64, $P < 0.001$) and increasing median PFS by 3.2 months (9.5 months vs. 6.3 months) for the first-line treatment of advanced non-small cell lung cancer (NSCLC). The aim of the study reported here was to evaluate the cost-effectiveness of a clinically relevant treatment strategy with gefitinib based on data from IPASS. The strategy with gefitinib involves EGFR mutation testing prior to treatment, followed by selective gefitinib treatment of EGFRm+ patients and doublet chemotherapy for EGFRm- 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 event rates of PFS and overall survival data. Other important parameters, e.g., prevalence of EGFRm+, cost of EGFR-diagnostics, resource utilization, and utility estimates 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 m+ patients is a cost-effective option compared to treating all patients with doublet chemotherapy in a Swedish setting.

PCN101

COST-UTILITY ANALYSIS OF DASATINIB AS A SECOND-LINE TREATMENT IN THE CHRONIC PHASE OF CHRONIC MYELOID LEUKAEMIA IN RUSSIA

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OBJECTIVES: To evaluate the cost-effectiveness of dasatinib 100 mg once daily in second-line therapy for chronic myeloid leukemia (CML) patients in the chronic phase (CP) resistant to imatinib 400 mg compared with imatinib 800 mg and nilotinib 800 mg in Russia. **METHODS:** A Markov cost-utility model was developed to estimate lifetime outcomes and resource use reflecting treatment practice for CML patients in Russia. Treatment efficacy, disease progression, and rates of adverse events in the model were based on published multicenter randomized controlled trials. **RESULTS:** Dasatinib appeared to be dominant over imatinib and nilotinib in CP-CML in the Russian setting. Incremental life expectancies were 0.17 years and 0.26 years when comparing dasatinib with imatinib and nilotinib, respectively; quality-adjusted life-years (QALYs) gains were of 0.18 and 0.22 QALY versus imatinib and nilotinib, respectively. The life-years and QALY gains on dasatinib treatment were due to a larger proportion of patients who achieved complete cytogenic response (CCyR). Mean cost saving per patient over a lifetime horizon with dasatinib were Rubles (RUB) 1,364,220 versus imatinib and RUB 778,621 versus nilotinib. Limitations of the model include a lack of direct comparative efficacy data at licensed doses, which precluded formal indirect comparison. **CONCLUSIONS:** Dasatinib was a dominating strategy, resulting in outcome gains (greater life expectancy and greater quality-adjusted life expectancy) and cost saving compared both to nilotinib and high-dose imatinib in CP-CML patients. Expanding access to new tyrosine kinase inhibitors for the treatment of CP-CML in Russia would ensure a greater choice of modern and effective therapies.

PCN102

COST-EFFECTIVENESS OF DIGITAL MAMMOGRAPHY IN A BREAST CANCER POPULATION-BASED SCREENING PROGRAM

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OBJECTIVES: The introduction of digital mammography presents benefits at the technological. However, there are doubts about its impact on the effectiveness of breast cancer screening. The aim of this study was to analyze the cost-effectiveness of the introduction of digital mammography in a population-based breast cancer screening program. **METHODS:** A discrete-event simulation model was implemented including the processes under a breast cancer screening program and the natural history of breast cancer. The screening events included: invitation (biennial) of the target population (women aged 50–69 years), participation, screening test, confirmatory tests after a positive mammography result, cancer diagnosis, and treatment. Natural history of breast cancer included the following health states: no cancer, preclinical (nonsymptomatic) cancer, clinical (or symptomatic) cancer, and death. Natural history was modeled as time until a change of health state, and health states were managed using attributes in order to condition the sensitivities and specificities of the tests to the current health state of the woman. Interval cancers were also detected according to the health state. Digital and analogical mammography had the same sensitivity, but different specificities were applied according to type of mammography and also initial or successive screening. Cost-effectiveness was calculated under a 20-year screening scenario and five simulations. **RESULTS:** Simulation started with a target population of 28,020 women. Other 29,552 women were enrolled in the target population during the simulated 20 years. This population resulted in 56,136 screening mammograms. The number confirmatory tests needed was 1864 under analogical mammography and 1724 under digital screening. Screen-detected cancers were 344 with analogical screening and 312 with digital screening. The overall ICER was €349.14. **CONCLUSIONS:** Results suggest that population-based breast cancer screening with digital mammography is cost-effective. It does not improve the results of conventional analogical mammography, but it reduces the cost in confirmatory tests.

PCN103

COST-EFFECTIVENESS ANALYSIS OF ADDING HPV VACCINATION TO CERVICAL CANCER SCREENING PROGRAM IN HUNGARY

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OBJECTIVES: Despite opportunistic and organized screening, mortality of cervical cancer is still high in Hungary in international comparison. The study aimed to