model was constructed with four health states regarding survival and irreversible adverse events. Health care costs and effects of SBRT, proton therapy and carbon-ion therapy were compared over a five-year time horizon. Transition probabilities were derived from single-armed observational studies, as no comparative studies were available. Utilities were collected in a cross-sectional survey. Probabilistic sensitivity analysis was performed to reflect parameter uncertainty. RESULTS: Preliminary results showed that the expected total health care costs per patient for SBRT were €18,366, for protons €24,267 and for carbon-ions €26,720. The expected quality adjusted life-years (QALYs) were 2.24, 2.40 and 2.45 respectively. This resulted in an incremental cost-effectiveness ratio (ICER) of €36,651 per QALY for protons as opposed to SBRT, and an ICER of €44,668 per QALY for carbon-ions as opposed to protons. For a ceiling ratio of €40,000 protons had the highest probability of being cost-effective (41%), followed by carbon-ions (35%) and SBRT (24%). For a ceiling ratio of €80,000 these probabilities were 42%, 52% and 6% respectively. CONCLUSIONS: These preliminary results indicate that PT is a potentially cost-effective treatment modality for inoperable stage I NSCLC. However, caution is warranted, as the differences are small and surrounded by considerable uncertainty. More analyses will be performed of which the results are presented at the conference. First, more advanced statistical techniques are applied to synthesize the available evidence. Second, for operable patients PT is compared to surgery. Third, the cost-effectiveness of PT is assessed for stage III NSCLC. Finally, expected value of perfect information analyses are presented to support research decisions.

An Economic Evaluation of Dasatinib (Sprycel®) in Chronic Phase Chronic Myeloid Leukemia (CP-CML) in Central and Eastern Europe

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Achieving complete cytogenetic response (CCyR) is associated with superior progression-free survival in patients with CML [1]. How this endpoint affects cost has not been evaluated. OBJECTIVES: To assess the cost needed to achieve one CCyR with dasatinib 140 mg vs. imatinib 600 and 800 mg in imatinib-resistant CP-CML, from the perspective of national health insurance in the Czech Republic, Hungary and Romania. METHODS: An economic analysis was conducted using the number of patients needed to be treated (NNT) to achieve one CCyR. The incremental cost for achieving CCyR in 15 months was determined. CCyR rates for dasatinib 140 and imatinib 800 mg were based on a randomized phase 2 trial START-R [2]. Given no published data on imatinib 600 mg, its CCyR rate was assumed to be the same as for imatinib 800 mg; an assumption in favor of imatinib. Costs were based on reimbursed drug-prices from national lists. In Hungary, reimbursed amounts for 600 or 800 mg of imatinib are the same. RESULTS: To achieve one CCyR, NNT is 6.25 for imatinib 2.5, and 2.5 for dasatinib. The costs to achieve one CCyR during 15 months of therapy are CZK9.1 million (€363,172), HUF52.8 million (€218,492) and RON1.2 million (€334,146) lower for dasatinib compared to imatinib 800 mg. The economic advantage of dasatinib remains when compared to imatinib 600 mg. The incremental costs to achieve one CCyR between imatinib 600 mg and dasatinib are CZK5.7 million (€228,664), HUF52.8 million (€218,492) and RON0.7 million (€205,316). CONCLUSIONS: In imatinib-resistant CP-CML patients, therapy with dasatinib provides better efficacy and lower cost compared to imatinib 600 and 800 mg in Central and Eastern Europe to achieve one CCyR. The magnitude of the advantage varies due to different pricing and financing systems. [1] Hughes et al. NEJM 2003;349:1423–32; [2] Kantarjian et al. Blood 2007;109:5143–50.

Evaluating the Long-term Clinical and Economic Benefits of Insulin Lispro in Type 1 Diabetes in the United Kingdom: A Cost-effectiveness Analysis Based on the Results of a Recent Meta-analysis

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OBJECTIVES: Diabetes affects over 2.3 million people in UK; approximately 10% have type 1 diabetes (T1DM). The aim of this study was to evaluate the long-term cost and clinical outcomes associated with lispro versus regular human insulin (RHI) in the UK T1DM patients using the previously published and validated CORE Diabetes Model. METHODS: Several clinical trials have provided evidence that short-acting insulin analogs, with improved pharmacokinetic properties, may have benefits in terms of glycemic control (HbA1c) and hypoglycemic event rates compared to mealtime human insulin. For the simulations, clinical benefits were derived from a recent Cochrane meta-analysis which found the weighted mean difference in HbA1c to be −0.1% (95% CI −0.2% to −0.0%) for treatment with lispro versus RHI. Major hypoglycemic event rates for lispro and RHI were 21.8 and 46.1 per 100 patient-years, respectively. Current prices of insulin lispro (Humalog), regular human insulin (Humulin R) and basal NPH insulin (Humulin I) were obtained from http://www.mims.co.uk. Complication costs and patient management costs (screening and concomitant medications) were derived from published sources. All costs were accounted in 2007 Pounds Sterling (£) from a National Health Service (NHS) perspective. Future costs and clinical benefits were discounted at 3.5% annually. RESULTS: Model projections indicated that lispro was associated with a benefit in quality-adjusted life expectancy of approximately 0.10 QALYs versus RHI (7.60 vs. 7.50 QALYs). Lifetime direct medical costs per patient were lower with lispro treatment, £70,576 versus £72,529. Lispro was projected to be dominant (lower cost; more benefit) compared to RHI. Results were robust to sensitivity analyses including time horizon, discounting rates and scenarios assuming benefit only on glycemic control or hypoglycemia rates. CONCLUSIONS: The study suggests that lispro is likely to improve quality-adjusted life expectancy and reduce costs in UK patients with T1DM, due principally to benefits in hypoglycemic event rates.

Impact of Overweight or Obesity on Treatment Costs in Patients with Diabetes in the USA: Quantile Regression Approach

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OBJECTIVES: To estimate the impact of overweight or obesity on treatment costs (TCs) in diabetic patients in the United States. METHODS: Five-year (2001–2005) pooled Medical Expenditure Panel Survey data, a nationally representative sample of U.S.