

PCN43

COST-EFFECTIVENESS OF CETUXIMAB (ERBITUX®) IN COMBINATION WITH RADIOTHERAPY VERSUS RADIOTHERAPY ALONE IN THE TREATMENT OF LOCALLY ADVANCED HEAD AND NECK CANCER IN FRANCE

Brown B¹, Robinson P¹, Launois R², Griebisch J³¹IMS Health, London, UK, ²REES, Paris, France, ³Merck KGaA, Darmstadt, Germany

OBJECTIVE: To estimate the cost-effectiveness of cetuximab in combination with radiotherapy (ERT) compared to radiotherapy alone (RT), for the treatment of locally advanced head and neck cancer in patients for whom chemoradiotherapy is inappropriate or intolerable in France. **METHODS:** A modelled economic evaluation calculated the incremental cost per quality-adjusted life year (QALYs) gained with ERT compared to RT. Resource utilisation and survival data were extracted from an international phase-III trial of ERT. Assumptions regarding costs of care were drawn from estimates by an expert clinical panel. Overall survival and progression-free survival times were extrapolated beyond the trial period using statistical models. Patient survival was stratified into health states defined by adverse event status in the acute phase and disease status post-treatment. Utility values for the health states were obtained from a survey of oncology nurses using the EQ-5D. Estimates of individual costs and outcomes were estimated for each patient in the trial and overall mean values calculated for the incremental analysis between the treatment groups. The analysis was conducted from the perspective of the public and private French healthcare system. Costs and outcomes were discounted at 3.5%. **RESULTS:** In the lifetime analysis, ERT patients were estimated to gain an extra 1.07 QALYs compared to RT patients. From the public establishment perspective, this translated into an incremental cost per QALY gained of €10,927. Shortening the analysis to the time-frame of the clinical trial (5 years) raised the ICERs to €31,355 per QALY gained respectively. Bootstrap simulation and sensitivity analysis showed that the ICERs were robust to changes in the key variables. **CONCLUSIONS:** Results of the modeled economic evaluation strongly suggest that ERT offers a good value-for-money alternative in the treatment of locally advanced head and neck cancer in France.

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COST UTILITY ANALYSIS OF PRIMARY PROPHYLAXIS WITH PEGFILGRASTIM VERSUS FILGRASTIM FOR BREAST CANCER IN THE UK

Booth P¹, Dubois R², Doan QV², Liu Z²¹Amgen Ltd, Cambridge, UK, ²Cerner Health Insights, Beverly Hills, CA, USA

OBJECTIVES: Primary (first and subsequent cycles) prophylaxis with colony stimulating factors is recommended in the 2006 ASCO and EORTC clinical guidelines when the risk of febrile neutropenia (FN) is $\geq 20\%$. In clinical practice, filgrastim has often been used for fewer than the recommended 11 days, which has been shown to compromise clinical outcomes. This study evaluated the cost-utility of pegfilgrastim vs. filgrastim (11- or 6-days) primary prophylaxis in women with breast cancer receiving chemotherapy with $\geq 20\%$ FN risk in the UK. **METHODS:** We constructed a decision-analytic model from a payer's perspective. Costs were from official list prices or literature and included drugs, drug administration, FN-related hospitalisations and subsequent medical costs. FN risk (varied by days of filgrastim), FN case-fatality, relative dose intensity (RDI), the impact of RDI on survival, and utility scores were based on a comprehensive literature review and expert panel validation. Breast cancer mortality and all-cause mortality were obtained

from official statistics. Model robustness was tested using multi-way sensitivity analyses. **RESULTS:** Pegfilgrastim was cost-saving in addition to being more effective than 11-day filgrastim. Compared with 6-day filgrastim, pegfilgrastim achieved 0.107 more QALYs (15.139 vs. 15.032 QALY) at a minimal cost increase of ≤ 446 (≤ 3193 vs. ≤ 2747) per person; the incremental cost-utility ratio was ≤ 4166 /QALY. Pegfilgrastim decreased the absolute risk of FN by 10.5% (17.5% vs. 7%), and was associated with ≤ 4246 per FN avoided or ≤ 42 per 1% decrease in absolute risk of FN. Age of diagnosis and cancer stage had minimal impact on the results. The results were sensitive to the costs of drugs and risk of FN. **CONCLUSIONS:** Use of pegfilgrastim in the UK appeared to dominate 11-day use of filgrastim. The value of pegfilgrastim vs. 6-day filgrastim at ≤ 4166 /QALY is very favourable compared with the cost-effectiveness threshold commonly used in the UK HTA setting.

PCN45

COST EFFECTIVENESS OF ADDING IMATINIB TO CHEMOTHERAPY IN ADULT PATIENTS WITH PHILADELPHIA CHROMOSOME-POSITIVE ACUTE LYMPHOBLASTIC LEUKEMIA (PH⁺ALL): AN EXPLORATORY ANALYSIS FOR THE UK

Botteman MF, Tran KT, Stephens JM

PharMerit North America LLC, Bethesda, MD, USA

OBJECTIVES: Imatinib combined with conventional chemotherapy (CC) in Ph⁺ALL patients has produced encouraging efficacy results with a well-tolerated safety profile. This study explores the cost effectiveness of imatinib plus CC versus CC alone in adult Ph⁺ALL patients. **METHODS:** A Markov model simulated a hypothetical cohort of adult Ph⁺ALL patients receiving imatinib plus CC or CC alone. The model included three states: alive without disease progression (DFS), alive with disease progression (DS), and death. State transition probabilities were derived from the published literature. In the absence of relevant data pertaining to Ph⁺ALL, assumptions about costs and utilities were derived from a cost analysis of CML. Only direct medical costs were included, adopting a UK health care payer perspective. All outcomes were discounted. An adaptation of the model to the US perspective was conducted as well. **RESULTS:** The model projects that the total discounted survival was 1.10 years for CC and 4.31 years for imatinib+CC. Total discounted disease free survival was 0.76 year for CC and 2.77 years for imatinib+CC. The total discounted quality adjusted life years (QALY) were 0.85 v. 3.28 for CC and imatinib+CC, respectively. Thus, the net incremental gain in discounted quality adjusted survival was 2.43 QALYs. The monthly costs of DFS and DS were estimated at £123 and £417, respectively. The net costs associated with imatinib were £51,757 for the UK. The incremental cost per QALY of imatinib+CC v. CC alone was approximately £21,290 (i.e., £51,757 divided by 2.43 QALYs). Adapting the model to the US perspective, the incremental cost per QALY was about \$42,000. **CONCLUSIONS:** For adult ALL patients with poor prognosis due to Ph⁺ALL, our exploratory analysis suggests that, given the underlying data and assumptions, adding imatinib to current chemotherapy regimens is cost-effective compared to chemotherapy alone both from the UK and the US perspectives.

PCN46

EPOIETIN ALPHA TREATMENT FOR CANCER PATIENTS WITH CHEMOTHERAPY INDUCED ANAEMIA—A COST-EFFECTIVENESS ANALYSIS FOR SWEDEN

Borg S, Glenngård AH, Persson U

The Swedish Institute for Health Economics, IHE, Lund, Sweden

Anaemia is a common complication of chemotherapy. Since anaemia can lead to different symptoms, such as fatigue, respiratory distress and chest pain, thereby diminishing physical capacity and quality of life, it is generally accepted that anaemia should be corrected. Treatment options include red blood cell transfusion (RBCT), erythropoietin (EPO) administration or a combination of both. **OBJECTIVE:** Our objective was to carry out a cost-effectiveness analysis of treatment with EPO (erythropoietin alpha) compared to traditional treatment with RBCT for patients with chemotherapy-induced anaemia in Sweden from a hospital perspective. **METHOD:** We developed a model for Swedish treatment practice (patient characteristics, response rates, and RBC transfusion data taken from Swedish observational data), and Swedish unit costs, based on a model commissioned by the National Institute of Clinical Excellence, UK. Incremental costs associated with EPO treatment compared to treatment with RBCT, were estimated. Different cancer types and populations were modelled by varying initial Hb, response and mortality rates. **RESULTS:** The model results on costs correspond well to real world data from three big hospitals in Sweden. Average costs per patient are SEK34,900 for EPO and SEK 12,400 for RBCT. The cost per QALY gained from administration of EPO assuming a survival benefit attributable to EPO treatment was estimated at SEK 120,000. The survival benefit from EPO is debated, and has a major impact of the results. Excluding this benefit gives an estimated cost of SEK 365,000 per QALY. EPO treatment is most cost-effective in patients with initial Hb of 9–10 g/dl. The cost-effectiveness-ratio is also moderately sensitive to changes in the response rate to EPO, baseline mortality, the cost of EPO and the estimated QALY gain from EPO administration. **CONCLUSION:** The estimated cost per QALY falls well within the range acceptable in Sweden. The cost-effectiveness of EPO varies between different cancer populations.

PCN47

COUNTY LEVEL INEQUALITIES IN THE ATTENDANCE OF THE HUNGARIAN ORGANIZED NATIONWIDE CERVICAL CANCER SCREENING PROGRAMME

Boncz¹, Sebestyén A¹, Döbrösy L², Budai A², Betlehem J³, Ember I³
¹National Health Insurance Fund Administration (OEP), Budapest, Hungary, ²National Public Health and Medical Officers Service (ÁNTSZ), Budapest, Hungary, ³University of Pécs, Pécs, Hungary

OBJECTIVES: Organized nationwide screening programme for cervical cancer was introduced in Hungary in 2003. Women between the ages 25–65 are invited by a personal letter and a 3 years screening interval has been applied. Before the implementation of organized screening programme there was an opportunistic screening. The aim of this study is to analyse the three year screening rate (attendance or coverage) of the organized programme according to counties. **METHODS:** The data derive from the financial database of the National Health Insurance Fund Administration (OEP) of Hungary covering the period of 2000–2005. We calculated the three-year screening rate of two periods: 2000–2002 without and 2003–2005 with organized screening programme for women aged 25–64. Screening is defined with cytological examination of Papanicolaou smear and includes all smears taken either within or outside of the organized programme. **RESULTS:** The age specific screening rate of women aged 25–64 years increased from 48, 45% in 2000–2002 without organized screening programme to 52, 65% in 2003–2005 following the introduction of organized screening programme. There were significant differences in the screening rate (attendance or coverage) among counties with the highest values in county Baranya (58, 59%), Tolna (55, 35%), Borsod-

Abaúj-Zemplén (54, 61%) and the lowest values in county Jász-Nagykun-Szolnok (40, 06%), Vas (41, 47%), Veszprém (42, 52%). From 2000–2002 to 2003–2005 we found the largest increase in the following counties: Veszprém (14.35 percent point), Borsod-Abaúj-Zemplén (7.69 percent point), Békés (5.46 percent point). The gap between the counties with the highest and lowest screening rate decreased. **CONCLUSIONS:** We found significant differences in the screening rate among counties, which should be reduced. However, the introduction of organized cervical screening programme lead to closing up the between county differences.

PCN48

A MODEL FOR PROJECTING BOWEL CANCER INCIDENCE AND MORTALITY: APPLICATION TO THE UK BOWEL CANCER SCREENING PROGRAM

Muston D¹, Howard PA¹, Lee DW²

¹Heron Evidence Development Ltd, Letchworth, Herts, UK, ²GE Healthcare, Waukesha, WI, USA

OBJECTIVES: To develop a simulation model for estimating the future impact on deaths and new bowel cancer registrations under alternative bowel cancer screening programme implementation and design strategies. **METHODS:** The UK began phasing in a faecal occult blood test (FOBT) bowel cancer screening programme for all persons aged 60–69 in April 2006. We fitted a novel Bayesian autoregressive age-period-cohort model (Bray 2002) to bowel cancer incidence and mortality data in England 1993–2003/4 (ONS/GAD 2005) that uses parameters efficiently and provides credible intervals for assessing projection uncertainty. We then used the model with results taken from separate cohort-based bowel cancer natural history modelling (Tappenden 2004) and government age- and gender-specific population projections to estimate bowel cancer incidence and mortality for 2003–2016 under various bowel cancer screening program design and implementation strategies. **RESULTS:** The model fit the data well. We estimate that phased implementation of the UK bowel screening program will result in 2440 undetected cancers (95% CI 808–10,160) and 244 (95% CI 114–610) additional bowel cancer deaths in 2006–8. Further, a programme combining FOBT with flexible sigmoidoscopy would detect an estimated 737 (95% CI 207–3917) more bowel cancers and prevent 389 (95% CI 156–1168) more deaths than FOBT alone. **CONCLUSIONS:** This model provides a valuable tool for generating point and interval estimates of the long-term population impact of alternative bowel cancer screening program implementation and design strategies, and can be updated as new information arises. Projection uncertainty arises from the model itself and the disease natural history information used to inform it.

PCN49

FACTORS INFLUENCING INEQUITABLE ACCESS TO RADIATION THERAPY: THE CASE STUDY OF CANCER PATIENTS IN THAILAND

Prakongsai P¹, Chunharas S², Tangcharoensathien V¹

¹International Health Policy Program—Thailand, Nonthaburi, Thailand,

²National Health Foundation, Bangkok, Thailand

OBJECTIVES: To describe factors influencing inequitable access to radiation therapy among cancer patients in Thailand by exploring the current situation and problems of both demand and supply sides after implementation of the policy on universal coverage. The study aimed to improve efficiency in health resource allocation and equitable access to expensive health services by using radiation therapy as the case study. **METHODS:**