CYP2D6 activity derive inferior therapeutic benefit from tamoxifen, and may alternatively be treated with newer aromatase inhibitors (AIs). However, the high costs of AIs provide incentive for identifying patients who will benefit from tamoxifen prior to treatment. We estimated the cost-effectiveness of genetic testing in combination with hormone therapy for early breast cancer in Canada. **METHODS:** We performed a cost-effectiveness analysis using a Markov model from a societal perspective and a lifetime horizon. The base case assumed 40-year-old ER+ hormone sensitive women with early breast cancer. We evaluated: genetic testing with subsequent treatment based on genetic status (tamoxifen for CYP2D6 extensive metabolizers and AIs for decreased metabolizers) vs. no testing (tamoxifen for all patients). Probabilistic sensitivity analysis was used to incorporate parameter uncertainties. Expected value of perfect information was performed to identify future research directions. Outcomes were quality-adjusted life years (QALYs) and costs. **RESULTS:** The genetic testing and treatment combination strategy resulted in a 2.87 QALY gain when compared to no testing. The incremental cost was CAD $25,661 compared to standard care, and the incremental cost-effectiveness ratio (ICER) for the base case was $8,927 per QALY. The ICER was sensitive to disease progression among intermediate metabolizers, and costs of terminal care and aromatase inhibitors. **CONCLUSIONS:** CYP2D6 Genetic testing in combination with hormone treatment for early breast cancer patients may be economically attractive in the current setting. Future research is required to determine efficacy of extended tamoxifen (more than 5 years) treatment, the rate of progression to a more advanced cancer health state and adverse events by CYP2D6 polymorphism.

PCN59

## COST EFFECTIVENESS ANALYSIS OF LAPATINIB/CAPECITABINE (LC) VERSUS TRASTUZUMAB/CAPECITABINE (TC) IN PATIENTS WITH METASTATIC BREAST CANCER ERBB2+ AFTER PROGRESSION TO THE FIRST SCHEME OF TRASTUZUMAB

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**OBJECTIVES:** To develop a cost-effectiveness analysis of LC versus TC in the treatment of metastatic breast cancer ErBb2+ after progression to one regime of trastuzumab. **METHODS:** A Markov model was designed with one week length cycles, two years time horizon and two stages: Free of Progression and Progression. The analysis was conducted from the perspective of the Mexican public Health System for patients who had progressed to the first scheme of trastuzumab (around 900 patients). Efficacy data for this specific population was based on and ad-hoc sub analysis reported by Cameron 2010 for LC: 0.50, p=0.001 and per protocol population reported by Minckwitz 2009 for TC: 0.69, p=0.034. Baseline analysis used time to progression for monotherapy reported by Minckwitz and an univariate sensitivity analysis was run with monotherapy results by Cameron. Government prices were used for capecitabine (2000 mg/m2/day), lapatinib (1250 mg/day) and trastuzumab (2 mg/kg/week). One chemotherapy session cost was added every three weeks in the trastuzumab arm. Results are reported in US dollars. **RESULTS:** Cost-effectiveness ratio for LC and TC was $650.82 and $756.86 respectively. LC group had an average incremental effectiveness of 7.47 weeks free of progression and an incremental cost of $371.74 (ICER=$49.74). The acceptability curve showed that with a willingness to pay above $480.16 per free of progression week the 100% of cases would be cost-effective. In the univariate sensitivity analysis the LC group gained 8.04 weeks free of progression with an incremental cost of $225.60 compared to TC (ICER=$28.04). **CONCLUSIONS:** According to this analysis the LC group gained 7.47 weeks free of progression with an extra cost of $371.74 ($49.74 per week) compared to TC. The LC group had a lower monthly cost of treatment ($650.82) than TC ($756.86). LC is cost-effective with a willingness to pay above $480.16 per extra progression free week.

PCN60

## COST-EFFECTIVENESS OF PEGFILGRASTIM VERSUS FILGRASTIM AFTER HIGH-DOSE CHEMOTHERAPY AND AUTOLOGOUS STEM CELL TRANSPLANTATION IN PATIENTS WITH LYMPHOMA AND MYELOMA

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**OBJECTIVES:** To assess the cost-effectiveness of a single-dose Pegfilgrastim 6mg subcutaneously at day 5 *versus* Filgrastim 5$\mu$g/kg/day subcutaneously from D5 to resolution of neutropenia (absolute neutrophil count ANC≥0.5G/L) after stem cell reinfusion in adult patients with lymphoma or myeloma, which is one of the first studies on observational data. **METHODS:** Cost-effectiveness was assessed within an open, multicentre randomized phase-II trial. The time horizon was 100+/−10 days from stem cell transplantation. Cost computation, using a microcosting approach focused on inpatient and home care, and cost distributions between the two treatment arms were compared using the Mann-Whitney test. Multiple regression analyses were performed in order to identify cost drivers. Incremental cost-effectiveness ratios (ICERs) were based on the number of days with 1) febrile neutropenia (ANC<0,5G/L and temperature ≥38°C), 2) neutropenia (ANC<1.0G/L), 3) thrombopenia (platelets<20.0G/L), and 4) temperature (≥38°C). Uncertainty around ICERs was evaluated using Filler's method and Monte Carlo simulations. **RESULTS:** 151 patients were enrolled (October 2008/September 2009). One was not evaluable due to missing data. Average total costs reached 25,024€ (SD 9,945€) for Pegfilgrastim (n=74) *versus* 28,700€ (SD 25,165€) for Filgrastim (n=76), with 22,061€ (SD 8,101€) *versus* 25,165€ (SD 16,572€) for hospitalisation; 1,217€ (SD 2,039€) *versus* 1,444€ (SD 3,367€) for anti-infectious treatment; 1,106€ (SD 1,132€) *versus* 1,329€ (SD 2,598) for transfusions; and 639€ (SD 89€) versus 762€ (SD 230€,) for growth factors, respectively. The cost of growth factors significantly decreased with Pegfilgrastim, in women, in patients with previous induction. Pegfilgrastim dominated Filgrastim for number of days with febrile neutropenia, neutropenia, thrombopenia, and temperature. On the two-fold basis of their cost and their medical effectiveness, Pegfilgrastim dominated Filgrastim based on the 82% confidence region. **CONCLUSIONS:** From these results there seems to be no restriction to the prescription of Pegfilgrastim in lymphoma and myeloma patients after high-dose chemotherapy and autologous stem cell transplantation.

PCN61

## COST-EFFECTIVENESS OF 1-YEAR ADJUVANT TRASTUZUMAB THERAPY FOR EARLY STAGE OF HER2-POSITIVE BREAST CANCER

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**OBJECTIVES:** Evaluate the cost-effectiveness of addition one-year adjuvant trastuzumab therapy to standard adjuvant chemotherapy in treatment of HER2 + breast cancer (BC) early stage from a societal perspective in a Russian setting. **METHODS:** We used a Markov state transition model to simulate adjuvant trastuzumab treatment in a hypothetical cohort of early breast cancer patients for lifetime horizon. Patients were treated with a combination of chemotherapy and 1-year trastuzumab therapy (HT + T) or only with chemotherapy (HT). The transition probabilities between states in the Markov model, the effectiveness and usefulness of treatment were obtained from clinical studies HERA, 2005 and other published data. Costs for each state Markov model based on the standard treatment of breast cancer in Russia. Data about cost of medical services and drugs are received from the price-list of out-patient medical aid in clinic MMA of I.M.Sechenov 10.01.2010, site minzdravsoc.ru//medicine and other accessible electronic resources. Costs, effectivenesses, utilities were discounted at 3%. Sensitivity analysis for key parameters in the model was conducted. **RESULTS:** On the basis of Markov model with lifetime horizon, CT+T has an incremental cost-effectivesness ratio (ICER) of 860.704 roubles per LYG and incremental cost-utility ratio (ICUR) of 986.015 roubles per QALY. According to our threshold analysis, additional expenses on additional QALY are in a comprehensible range (825.000 −1.650.000 roubles), that has allowed to make the conclusion about an acceptability of one-year use trastuzumab in treatment of patients HER2 + breast cancer at early stages. Sensitivity analysis showed that major factors influencing cost-effectiveness and cost-utility ratios are survival gain, price of trastuzumab, discount rates. **CONCLUSIONS:** The combination 1-year adjuvant trastuzumab with standard chemotherapy is more cost-effective and cost-useful in comparison with standard chemotherapy for patients HER2 + breast cancer at early stages.

PCN62

## BAYESIAN MODELLING ASSESSING THE EFFECTIVENESS OF A VACCINATION STRATEGY TO PREVENT HPV-RELATED DISEASES: THE BEST STUDY

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**OBJECTIVES:** The cost-effectiveness of different Human Papillomavirus (HPV) vaccination programmes was already confirmed throughout a large body of modelling studies. An excess of uncertainty associated with the main parameters of commonly utilized models can be observed. The aim of this study was to assess the cost-effectiveness of a quadrivalent-based multi-cohort HPV vaccination strategy using a statistical Bayesian approach. **METHODS:** A full Bayesian Markov model was used, where all unknown quantities were associated with suitable probability distributions reflecting the state of science currently available. These distributions were updated by the observation of any Italian available data, and uncertainty was propagated through the entire model with a Markov Chain Monte Carlo procedure. The model was calibrated using age-specific incidence of invasive cervical cancer data. **RESULTS:** Base case (2 cohorts of girls aged 12 and 15 years) and other multi-cohort vaccination strategies under evaluation (3 and 4 cohorts) were cost-effective with a discounted cost per QALY gained corresponding to €12,013 (95% range €2,364 - €22,481), €13,232 (95% range €4,432 - €22,939), and €15,890 (95% range €7,179 - €25,139) for vaccination programmes based on 2, 3 and 4 cohorts, respectively. The overall expected effect of vaccination seems to be linked with the number of cohorts targeted. With a multi-cohort vaccination the combined reduction of HPV-related events occurred progressively early (range 3 – 6.5 years) compared with the vaccination of a single cohort. The analysis of the expected value of information showed that the uncertainty was always kept at a low level among different multi-cohort strategies. The cost associated with the achievement of the expected value of information ranged between €9 and €13 per patient. **CONCLUSIONS:** The quadrivalent-based multi-cohort HPV vaccination programme can provide excellent value for money spent and the Bayesian expected value-of-information analysis provides the most appropriate and feasible representation of this program's true value.