of-life cancer drugs, ceritinib may be considered as a cost-effective option compared with other available therapies for previous treated ALK+ NSCLC.

PCN147
COST-EFFECTIVENESS OF BORTIZOMIB FOR MULTIPLE MYELOMA: A SYSTEMATIC REVIEW
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OBJECTIVES: To summarize cost-effectiveness of bortezomib (BTZ) for multiple myeloma (MM) and identify bias in the published cost-effectiveness analysis (CEA). **METHODS:** Electronic bibliographic databases were searched from 2003 to 2014 for eligible CEA. The full publications of included CEAs were reviewed for data extraction. The reported base case incremental cost-effectiveness ratio per gained quality adjusted life year (QALY) or life year (LY) were converted to the ratio to 2013 country-specific gross domestic product per capita (GDPPC) to interpret cost-effectiveness according to World Health Organization (WHO) recommendation on cost-effectiveness threshold (3 GDPPC). The study designs and methods of the included CEAs were assessed regarding their impact on cost-effectiveness. **RESULTS:** 3 CEAs reported favourable cost-effectiveness of BTZ as induction treatment prior to stem cell transplantation (SCT) in Canada, Poland, and Germany (0.9379 to 2.351 GDPPC/QALY). BTZ/melpahlan/prednisone (VMP) was cost-effective compared to MP for MM ineligible for SCT in Canada, UK, and USA (0.9367 GDPPC to 2.0279 GDPPC/QALY). However, the survival outcomes estimated from indirect comparisons for VMP versus thalidomide (THD)/MP (MPT) and lenalidomide (LEN)/MP plus LEN as maintenance therapy (MPR-R) resulted conflicting cost-effectiveness. For relapsed/refractory MM, BTZ was cost-effective in UK (0.9224 to 1.8027GDPPC/LY) and USA (1.1053 or 1.2136 GDPPC/LY) when compared to best supportive care. The cost-effectiveness of BTZ for relapsed/refractory MM was favourable compared to thalidomide in USA (0.5235 GDPPC/LY) and dexamethasone (DEX) in Nordic countries. However, the reported conflicting cost-effectiveness of BTZ relative to LEN/DEX could also result from indirect comparisons on survival outcomes. **CONCLUSIONS:** BTZ was cost-effective for MM prior to SCT, MM ineligible for SCT, and relapse/refractory MM when compared to conventional treatments. However, caution is needed when interpreting the cost-effectiveness of BTZ relative to MPT and MPR-R for MM ineligible for SCT or LEN/DEX for relapse/refractory MM due to the potential bias associated with indirect comparisons.

PCN148
CONSEQUENCES OF BIOMARKER ANALYSIS ON THE COST-EFFECTIVENESS OF CETUXIMAB IN COMBINATION WITH IRINOTECAN BASED CHEMOTHERAPY FOR FIRST-LINE TREATMENT OF METASTATIC COLORECTAL CANCER. STRATIFIED MEDICINE AT WORK?
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OBJECTIVES: An economic evaluation was conducted to investigate the Incremental Cost-Effectiveness Ratio (ICER) of cetuximab in combination with FOLFIRI versus FOLFIRI, between three cohorts of the CRYSTAL study, and determine if the cost-effectiveness improves when treatment is stratified to patients with the genetic biomarkers, KRAS wild-type and RAS wild-type (wt) **METHODS:** From the CRYSTAL study, Individual Patient Data (IPD) was obtained from Merck Serono Biostatistics department. It was categorised into the three cohorts: the Intention To Treat (ITT) population and the two subgroups KRAS wild-type and RAS wild-type. Survival analysis was conducted on this data using R studio. Adverse events and resection rates were also obtained for the cohorts. NHS acquisition costs for cetuximab were used. A Merck Serono Cost Utility Model was then re-engineered to economically evaluate the three cohorts for comparison. **RESULTS:** From this analysis, the deterministic base case ICER, cost per Quality Adjusted Life Year (QALY) gained, results are £130,929 in the ITT, £72,053 in the KRAS wt and £44,184 in the RAS wt cohorts. **CONCLUSIONS:** From these results, it can be concluded that based on the data from the CRYSTAL study, stratification of patients by genetic biomarker KRAS wt and RAS wt does improve the cost effectiveness of cetuximab plus FOLFIRI versus FOLFIRI alone. The RAS wt cohort had the lowest ICER and is therefore the most cost effective of the three groups.

PCN149
COST-EFFECTIVENESS ANALYSIS OF GRANULOCYTE COLONY-STIMULATING FACTORS FOR THE PROPHYLAXIS OF CHEMOTHERAPY-INDUCED FEBRILE NEUTROPENIA IN PATIENTS WITH BREAST CANCER IN GREECE
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OBJECTIVES: To evaluate the cost-effectiveness of primary and secondary prophylaxis (PP & SP) with pegfilgrastim, lipegfilgrastim, and with 6-day filgrastim/lenograstim for chemotherapy-induced febrile neutropenia (FN) in patients with stage II and III breast cancer (BC) in Greece. **METHODS:** A Markov model containing a decision tree was locally adapted to estimate outcomes from payer perspective. The analysis was conducted for a lifetime horizon across three different chemotherapy schemes (TC, FEC-D and AC-T). Clinical inputs, such as baseline FN risk, efficacy of granulocyte colony-stimulating factors (G-CSFs), mortality, effect of FN on relative dose intensity were extracted from published studies. Direct medical costs (2015 EUD) for drug acquisition, administration and FN management were considered in the model. The outcomes were FN events avoided and incremental cost-effectiveness ratio (ICER) per FN event avoided. **RESULTS:** PP with pegfilgrastim was associated with fewest FN events (calculated by combining FN risk with the efficacy of G-CSFs: 0.110, 0.100, 0.127 for TC, AC-T, FEC-D, respectively) followed by PP with lipegfilgrastim (0.160, 0.146, 0.186 for TC, AC-T, FEC-D, respectively) and PP with filgrastim/lenograstim (0.340, 0.316, 0.410 for TC, AC-T, FEC-D, respectively). PP with pegfilgrastim was cost-effective versus SP with pegfilgrastim across all chemotherapy schemes (ICERs per FN event avoided: €7,472, €18,017 and €9,996 for TC, AC-T and FEC-D, respectively). SP with pegfilgrastim was cost-effective versus no prophylaxis. All other treatment strategies were excluded from the analysis via extended dominance or were dominated by a less expensive and more effective strategy. For instance, PP and SP with lipegfilgrastim was found to be dominated by PP and SP with pegfilgrastim.These results held for patients with stage II and III BC. **CONCLUSIONS:** Our analysis finds PP with pegfilgrastim to be a cost-effective option for chemotherapy-induced FN in patients with BC in Greece.

PCN150
VALUE OF IMPLEMENTATION OF PHYSICAL EXERCISE FOR CANCER SURVIVORS
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OBJECTIVES: To evaluate which strategy for implementing exercise interventions for cancer survivors and increasing providers´ adherence to the exercise guidance has the highest expected value, using value-of-implementation analysis. **METHODS:** The net-benefit framework underpinning health economic evaluations is used to conduct a value-of-implementation analysis considering seven implementation strategies (ISTs), including continuing medical education (CME), educational outreach visits (EOV), educational printed materials (EPM), local opinion leaders (LOPL), audit and feedback (AF), reminder systems (RS), and a multifaceted strategy (MF) consisting of CME and AF. The analysis consists of four steps; (1) analysing the expected value of perfect implementation (EVPIM) (2) assessing the estimated costs of the various ISTs, (3) comparing the ISTs´ costs to the EVPIM to decide which of these are considered cost-effective, and (4) assessing the total net benefit of the ISTs to identify which strategy has the greatest value. **RESULTS:** The EVPIM for physical exercise in the Netherlands is €522m, which represents the maximum value that could be achieved if the guidance was implemented perfectly with a 100% adherence. The costs of the implementation strategies are lowest for PEM with €710,600 and highest for MF with €2,173,700. All ISTs´ costs are well below the EVPIM and thus all ISTs are cost-effective. The net-benefit of the ISTs ranges from €15,753,000 for PEM to €10,150,500 for RS. **CONCLUSIONS:** All evaluated implementation strategies are a cost-effective way of implementing physical exercise interventions for cancer survivors and increasing health professionals´ adherence to this guideline. However, all strategies contribute only marginally to achieving the highest possible value of implementation. This suggests that investing in more intensive implementation would be justified given the expected net-benefit.

PCN151
PHARMACOECONOMICS OF RUXOLITINIB THERAPY IN PATIENTS WITH MYELOFIBROSIS
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OBJECTIVES: Overall survival (OS) and other important clinical trial endpoints seem increasingly more elusive in supporting rapid and efficient incorporation of innovative cancer drugs in clinical practice. We propose a clinical trial based pharmacoeconomic framework to assess the early therapeutic and economic value of ruxolitinib in patients with intermediate-2 or high-risk primary myelofibrosis. **METHODS:** Individual level data from patients randomized to ruxolitinib or best available therapy (BAT) in the COMFORT-II study was used to estimate: (a) OS, accounting for crossover effects, using Rank Preserving Structural Failure Time models; (b) treatment benefits beyond normative trial progression endpoints, using treatment persistence as a proxy for clinical progression; (c) drug therapy costs considering detailed timeline patterns of ruxolitinib dose adjustments, using a piecewise mixed regression model for continuous longitudinal data; and (d) the time evolution of the average number of red blood cell transfusions per patient, using a mixed regression model for ordered multinomial longitudinal data. **RESULTS:** A 3.3 year increment in life expectancy was estimated for ruxolitinib as compared to BAT (HR OS = 0.30; [95% CI: 0.17 - 0.55]; p-value < 0.001), resulting in a 2.43 discounted (5%/year) increment in life years (LY). Corresponding incremental lifetime health care cost amount to 97,052€ per patient starting treatment with ruxolitinib. Of those, roughly 90% is for drug therapy costs (87,267€) with the remaining 9,785€ attributable mainly to patients being alive for longer periods and consuming more heath care resources. This results in an incremental cost-effectiveness ratio of 40,000€/LY gained with ruxolitinib. A probabilistic sensitivity analysis showed a greater than 95% probability of ruxolitinib being cost-effective against BAT, at a willingness to pay up to 50,000€/LY. **CONCLUSIONS:** We show how valuable information from clinical trials can be used to support informed decisions about the early incorporation of innovative drugs.

PCN152
COST-EFFECTIVENESS ANALYSIS OF PERTUZUMAB FOR METASTATIC HER2-POSITIVE BREAST CANCER IN JAPAN
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OBJECTIVES: The objective of this study is to evaluate cost-effectiveness of pertuzumab in combination with trastuzumab and docetaxel for HER2-positive metastatic breast cancer in Japan. The National Institute for Health and Care Excellence (NICE) in the UK did not recommend pertuzumab due to poorer cost-effectiveness. While the Ministry of Health and Welfare of Japan decided to cover pertuzumab by health insurance in 2013, its cost-effectiveness in Japan has not yet been reported. **METHODS:** Cost-effectiveness analysis was performed using a Markov model based on clinical data from a phase III randomized double-blind placebo-controlled international multicenter clinical trial (CLEOPATRA). Pertuzumab in combination with trastuzumab and docetaxel was compared with trastuzumab and docetaxel. The base case was