

annually. Two-way sensitivity analyses were performed by varying values for key parameters in the model. **RESULTS:** Under base-case scenario, gain of QALYs per patient associated with exemestane (29 QALYS) was higher compared with tamoxifen (28 QALYS) and raloxifene (28 QALYS). The cost of gaining one QALY with exemestane (\$44,723) was found to be low compared to tamoxifen (\$93,053) and raloxifene (\$70,940). These results were robust to the two-way sensitivity analyses performed. **CONCLUSIONS:** Results suggested that switching to exemestane after 2 years of primary treatment with tamoxifen was cost-effective.

PCN156

COST-EFFECTIVENESS OF A MAILED ADVANCE NOTIFICATION LETTER TO INCREASE COLORECTAL CANCER SCREENING

Cronin P¹, Goodall S¹, Lockett T², O'Keefe C², Norman R¹, Church J¹

¹University of Technology Sydney, Sydney, Australia, ²CSIRO Mathematics, Informatics and Statistics, Sydney, Australia

OBJECTIVE: Colorectal cancer (CRC) is one of the leading causes of cancer-related deaths in Australia and a common cause of morbidity and mortality worldwide. Screening is an attractive option since there is an identifiable precursor lesion and the bowel is readily accessible for screening. In addition, the early detecting of CRC or adenoma has been proven to reduce CRC-associated mortality. The faecal-occult blood test (FOBT) is a widely-used cost-effective screening tool for large-scale bowel cancer screening programs. In 2006, a National Bowel Cancer Screening Program (NBCSP) was established in Australia, using an immunochemistry-based FOBT. The Program currently targets all Australians who turn 50, 55 or 65 years of age between January 2011 and December 2014. Despite the proven impact of screening on reducing bowel cancer mortality, the uptake of the NBCSP has been low. **OBJECTIVES:** To evaluate the cost-effectiveness of a patient-direct mailed advance notification letter, on participants of the NBCSP in Australia. **METHODS:** This study followed a hypothetical cohort of 50-year-old, 55-year-old and 65-year-old patients undergoing FOBT screening through a Decision analytic Markov model. The intervention compared two strategies: 1) Advance letter, NBCSP and FOBT compared with 2) NBCSP and FOBT. The main outcome measures were life years gained (LYG), quality-adjusted life years (QALY) gained and incremental cost-effectiveness ratio (ICER). **RESULTS:** An advance notification screening letter would yield an additional 54 per 100,000 CRC deaths avoided compared with no letter. The estimated cost-effectiveness was \$3976 per LYG and \$6976 per QALY gained. **CONCLUSIONS:** An advance notification letter in the NBCSP may have a significant impact on life years gained and cancer deaths avoided. It is cost-effective and offers a feasible strategy that could be rolled out across other screening program at an acceptable cost.

PCN74

COST-EFFECTIVENESS OF FDA-APPROVED CANCER DRUGS SINCE 2000

Winn A, Neumann PJ

Tufts Medical Center, Boston, MA, USA

OBJECTIVES: The escalating cost of innovative new cancer therapies has received increased attention in the medical literature and popular press. Cost-utility analyses (CUAs) provide information on value for money and are widely published in medical and economic literature. We describe the growth over time of cancer-related CUAs and the cost-effectiveness of new FDA approved interventions. **METHODS:** We systematically searched the Tufts Cost-Effectiveness Analysis Registry (www.cearegistry.org) for original cancer-related CUAs published through 2010. In addition to overall descriptive statistics, we analyzed the cost-effectiveness of all FDA-approved cancer therapies from 2000 to 2010. **RESULTS:** We identified 493 cancer-related CUAs from 2000-2010 (16% of all studies in the Registry during that time period). The number of cancer studies has increased dramatically; since 2006, the total has more than doubled. Among cancer therapies approved by the FDA from 2000 to 2010, over 50% had relevant cost-utility ratios. Among CUAs focused on newly-approved therapies, 55% were sponsored by industry compared to 21% industry-sponsorship of studies focused on all other therapies, which includes non-drug and older and non-approved FDA therapies. The median reported cost-effectiveness ratio (US\$2010) was \$28,000 for all cancer studies. For therapies approved by the FDA from 2000 to 2010 the median ICER was \$29,000. For newly-approved therapies, industry sponsorship was associated with a median ICER of \$23,000 compared to \$49,000 for non-industry sponsored studies (p=.01). **CONCLUSIONS:** The number of CUAs related to cancer continues to grow. Despite high costs, many newly-approved therapies have ratios reflecting relatively good value for money; however, many new therapies have not had cost-utility analyses published.

PCN75

COST-EFFECTIVENESS OF BENDAMUSTINE+RITUXIMAB VERSUS FLUDARABINE+RITUXIMAB IN THE TREATMENT OF RELAPSED INDOLENT NON-HODGKIN'S AND MANTLE CELL LYMPHOMAS IN CANADA

Lachaine J¹, Beauchemin C¹, Mathurin K¹, Aissa F²

¹University of Montreal, Montreal, QC, Canada, ²Lundbeck Canada Inc., Montreal, QC, Canada

OBJECTIVES: Recurrent disease represents a clinical challenge in the treatment of indolent non-Hodgkin's lymphoma (iNHL) and mantle cell lymphomas (MCL). The combination of fludarabine+rituximab (FR) is among the current treatments for relapsed iNHL and MCL. The objective of this study was to assess the economic impact of bendamustine-rituximab (BR) compared to FR in the treatment of relapsed iNHL and MCL in Canada. **METHODS:** The cost-effectiveness of BR compared to FR in the treatment of relapsed iNHL/MCL was assessed over a lifetime horizon using a time-dependent Markov model. The

Markov model comprises three health states: progression-free (PF), progressive disease (PD) and death. The length of each Markov cycle is one month. All patients start in the PF state and could move to other health states thereafter, according to the respective efficacy of each treatment. The model also takes into account the incidence of treatment-induced adverse events including grade 4 haematological events and all grades nausea. Utility values associated with each health state and adverse events were used to estimate the number of QALYs associated with each treatment. Analyses were conducted from both a Canadian Ministry of Health (MoH) and a societal perspective. **RESULTS:** Compared with FR, BR is associated with ICERs of \$38,821 per QALY and \$45,809 per QALY, from a MoH and societal perspective respectively. Exhaustive sensitivity analyses confirm the robustness of the base-case scenario. Specifically, results of the probabilistic sensitivity analysis indicated that, according to a willingness to pay of \$50,000, BR remains a cost-effective strategy in 100% and 90.2% of the simulations. **CONCLUSIONS:** This economic evaluation demonstrates that bendamustine in combination with rituximab is a cost-effective strategy in the treatment of relapsed iNHL/MCL when compared with fludarabine in combination with rituximab.

PCN77

COST-EFFECTIVENESS OF COGNITIVE-BEHAVIORAL THERAPY AND PHYSICAL EXERCISE FOR ALLEVIATING TREATMENT-INDUCED MENOPAUSAL SYMPTOMS IN BREAST CANCER PATIENTS

Mewes JC¹, Steuten LMG¹, Duijts SFA², Oldenburg HSS³, Van Beurden M³, Stuiver MM³, Hunter MS⁴, Kieffer JM², Van Harten WH¹, Aaronson NK²

¹University of Twente, Enschede, The Netherlands, ²The Netherlands Cancer Institute, Amsterdam, The Netherlands, ³Antoni van Leeuwenhoek Hospital, Amsterdam, The Netherlands, ⁴King's College London, London, UK

OBJECTIVES: Many breast cancer patients suffer from (severe) menopausal symptoms after an early onset of menopause caused by cancer treatment. The standard treatment for these complaints is hormone replacement therapy, which, however, is contraindicated for this group, as it may have tumor-promoting effects. The aim of this study was to assess the cost-effectiveness of three interventions aimed at alleviating these symptoms: cognitive-behavioral therapy (CBT), physical exercise (PE), and the combination of both (CBT+PE). **METHODS:** A cost-effectiveness analysis was performed from a health care system perspective. The primary outcome was incremental health care costs (IHCC) per patient with a clinically relevant improvement after six months of treatments. The secondary outcome was incremental costs per quality-adjusted life years (QALYs) gained over a five-year time period. This was assessed using a Markov model, populated with data from a recent randomized controlled trial evaluating the effectiveness of CBT, PE, and CBT+PE in the clinical setting and additional cost data. The robustness of the results was analyzed through one-way and probabilistic sensitivity analyses. **RESULTS:** IHCCs for alleviating one patient of the perceived symptom burden by a clinically relevant difference after six months of treatment were EUR€605 for CBT, EUR€1,847 for CBT+PT, and EUR€1,250 for PE alone, compared to the waiting list control group. CBT generated 0.009 additional QALYs at an additional cost of EUR€162, compared to the control group, leading to an Incremental Cost Utility Ratio (ICUR) of EUR€18,655 per QALY gained and The ICUR of CBT+PE was EUR€42,375 per QALY in comparison to the control group. CBT had a high probability (circa 61%) of being cost-effective at prevailing ceiling ratios. **CONCLUSIONS:** CBT is likely the most cost-effective of the three interventions investigated for alleviating treatment-induced menopausal symptoms in breast cancer patients.

PCN78

COST-EFFECTIVENESS OF BENDAMUSTINE VERSUS IBRITUMOMAB TIUXETAN IN THE TREATMENT OF RITUXIMAB-REFRACTORY INDOLENT NON-HODGKIN'S LYMPHOMA IN CANADA

Lachaine J¹, Beauchemin C¹, Mathurin K¹, Aissa F²

¹University of Montreal, Montreal, QC, Canada, ²Lundbeck Canada Inc., Montreal, QC, Canada

OBJECTIVES: Non-Hodgkin's lymphoma (NHL) is the most common lymphoma type, comprising approximately 90% of all malignant lymphomas, and is the seventh most commonly diagnosed cancer in North America. For patients with advanced, symptomatic indolent NHL (iNHL), rituximab is among the standard first-line induction therapy. For rituximab-refractory iNHL cases, alternative treatments are limited and comprised radioimmunotherapy treatments such as ibritumomab tiuxetan. The objective of this study was to assess the economic impact of bendamustine compared to ibritumomab tiuxetan in the treatment of rituximab-refractory iNHL in Canada. **METHODS:** A time-dependent Markov model with one-month cycles was constructed to assess the cost-effectiveness of bendamustine compared to ibritumomab tiuxetan in the treatment of rituximab-refractory iNHL. The Markov transition model comprises three health states: progression-free (PF), progressive disease (PD) and death. All patients start in the PF state and could move to other health states thereafter, according to the respective efficacy of each treatment. The model also takes into account the incidence of treatment-induced adverse events including grade 4 haematological events and all grades nausea. Utility values associated with each health state and adverse events were used to estimate the number of QALYs associated with each treatment. Analyses were conducted from both a Canadian Ministry of Health (MoH) and a societal perspective over a lifetime horizon. **RESULTS:** Compared with ibritumomab tiuxetan, bendamustine is associated with ICERs of \$35,490 per QALY and \$42,130 per QALY, from a MoH and societal perspective respectively. Exhaustive sensitivity and complementary analyses confirm the robustness of the base-case scenario. Results of the probabilistic sensitivity analysis indicated that, according to a willingness to pay of \$50,000, bendamustine remains a cost-effective strategy in 99.9% and 96.3% of the simulations. **CONCLUSIONS:** This economic evaluation demonstrates that