

€4,471 per event averted. Probabilistic and univariate sensitivity analyses were robust and confirmed results of the base case scenario. **CONCLUSIONS:** This economic evaluation modeling suggests that celecoxib may be considered as a cost-effective alternative vs. t-NSAIDs in the treatment of osteoarthritis in daily practice in the Spanish NHS.

PMS41

THE COST-EFFECTIVENESS OF BIOLOGIC DMARDS IN PATIENTS WITH SEVERE OR MILD-TO-SEVERE RHEUMATOID ARTHRITIS AFTER CONVENTIONAL DMARDS

Wailoo AJ¹, Stevenson M², Tosh J², Hernández M², Stevens JW², Archer R², Simpson E², everson Hock E², Scott D³, Young A⁴, Paisley S⁵, Williams K⁵

¹NICE Decision Support Unit, Sheffield, UK, ²University of Sheffield, Sheffield, UK, ³KCL, London, UK, ⁴adam.young@nhs.net, Heertford, UK, ⁵The University of Sheffield, Sheffield, UK

OBJECTIVES: To estimate the cost-effectiveness of biologic disease modifying anti-rheumatic drugs (bDMARDs) following failure of conventional disease modifying anti-rheumatic drugs (cDMARDs) in patients with severe or mild-to-severe active rheumatoid arthritis from a UK, NHS perspective, as part of an ongoing National Institute of Health and Care Excellence (NICE) appraisal. **METHODS:** Systematic review of clinical effectiveness of seven bDMARDs: abatacept; adalimumab; certolizumab pegol; etanercept; golimumab; infliximab; and tocilizumab. Network meta-analyses (NMA) of randomised controlled trials (RCTs) reporting European League Against Rheumatism (EULAR) response and for RCTs reporting American College of Rheumatology (ACR) outcome data. An individual patient model was constructed to estimate costs and outcomes in terms of quality adjusted life years (QALY). Large observational databases, published literature and the results of the NMAs were used to provide data for the model. Following failure of two cDMARDs two broad strategies were evaluated i) a bDMARD, followed by, if necessary, rituximab then tocilizumab then cDMARDs and ii) remaining on cDMARDs. **RESULTS:** The estimated incremental costs per QALY of bDMARD strategies compared with a cDMARD alone strategy were typically over £50,000 regardless of the severity of rheumatoid arthritis or whether the EULAR or the ACR RCTs were used. The cost per QALY is greater for those who receive bDMARD monotherapy. One key parameter affecting the results was the estimated trajectory of HAQ progression whilst a patient received cDMARDs; using rates previously assumed in NICE appraisals reduced estimates to approximately £30,000. **CONCLUSIONS:** bDMARDs are unlikely to be as cost-effective as has been estimated previously. The costs per QALYs generated within our base case analyses are greater than commonly reported cost-effective thresholds in England and Wales.

PMS42

A COST-EFFECTIVENESS ANALYSIS FOR TOTAL KNEE ARTHROPLASTY TELEREHABILITATION: PROOF OF CONCEPT OF A DECISION MODEL

Fusco F¹, Turchetti G²

¹Scuola Superiore Sant'Anna, Pisa, Italy, ²Scuola Superiore Sant'Anna, Pisa, Italy

OBJECTIVES: The study aims to assess the cost-effectiveness of telerehabilitation for Total Knee Arthroplasty (TKA) patients in Italy. TKA was performed 64,936 times in Italy in 2012, reasonably leading to the same number of rehabilitation processes. The most recent cost analysis showed rehabilitation to account for Euro 158 million per year. Therefore, new strategies aiming at optimizing resources and preserve patients' wellbeing are claimed. **METHODS:** A four-state Markov model (successful TKA; revision; successful revision; death) forecasted costs and clinical outcome over 10 years (cycle length: 1 year) for 1,000 individuals undergoing usual care rehabilitation (UC) or a mixed UC-telerehabilitation (UC-T) program. Published literature provided transition probabilities and clinical outcome (active knee flexion Range Of Motion-ROM); while UC and telerehabilitation costs were estimated through Italian tariffs and panel of experts. Each surgery was assumed to lead to rehabilitation or telerehabilitation, resulting in direct medical and indirect costs (human capital approach). Results were adjusted applying half-cycle correction method and discount rate of 3%. A Probabilistic Sensitivity Analysis described parameters uncertainty and results were reported using Incremental Cost-Effectiveness Ratios (ICER) from societal and Italian-NHS perspectives. **RESULTS:** Expected mean health care costs for UC were 1,253.2€/patient over ten years, and UC-T costs were on average 33.7€/patient higher (95%CI €10.8). ROM-degrees for UC and UC-T were respectively 24.5 and 26.8 (mean difference=2.3, 95%CI 0.002). The resulting ICER was 14.5€/ROM-degree (Italian-NHS perspective). Adopting a societal perspective, UC-T was more effective yet appeared cheaper than UC (respectively 1,429 and 1,457€/patient, mean difference -28/patient (95% CI €10.8)). **CONCLUSIONS:** Although the preliminary results have shown that UC-T could be a cost-saving procedure if societal perspective is adopted; these findings are uncertain due to the model assumptions. Therefore, further investigations with patient-level data and generic outcome measures (e. g. QALY) are required to draw definitive conclusions about cost-effectiveness in telerehabilitation.

PMS43

HEALTH ECONOMIC EVALUATION OF OSTEOPOROSIS SCREENING AND TREATMENT STRATEGY IN THE ELDERLY JAPANESE WOMEN

Yoshimura M¹, Moriwaki K², Noto S³, Takiguchi T³

¹Graduate School of Health and Welfare, Niigata University of Health and Welfare, Niigata, Japan, ²Kobe Pharmaceutical University, Kobe, Japan, ³Niigata University of Health and Welfare, Niigata, Japan

OBJECTIVES: The objective of this study was to estimate the cost-effectiveness of osteoporosis screening and treatment with alendronate in the Japanese women aged ≥65 years without a fragility fracture history. **METHODS:** A Markov model with ten health states (no event, seven types of post-fracture, bedridden, and death) was developed to predict lifetime costs and quality-adjusted life years (QALY) of screening and treatment strategy, comparing with no screening. In the screening arm, 1,000 hypothetical cohort experienced a bone mineral density

(BMD) testing with dual energy x-ray absorptiometry (DXA) and received five years alendronate therapy if the percent young adult mean (%YAM) for BMD was less than 70%. Lifelong drug therapy for secondary fracture prevention was assumed for patients who had a osteoporotic fracture. For the base-case analysis, we ran the model with different age groups (65-69, 70-74, and 75-79 years). **RESULTS:** In the women aged 65-69 years, screening strategy incurred an additional lifetime cost of \$1,486 per person and conferred an additional 0.029 QALY, resulting in an incremental cost-effectiveness ratio of \$51,195per QALY gained. For those aged 70-74 and 75-79 years, ICER was estimated to be \$23,375 and \$17,742per QALY, respectively. Probabilistic sensitivity analysis showed that in women aged 65-69,70-74 and 75-79 years, screening strategy was cost-effective in 48.9%, 58.9%, and 59.7% of the simulations, respectively, if society is willing to pay \$50,000 per QALY. **CONCLUSIONS:** Osteoporosis screening and treatment strategy would be cost-effective in the Japanese women aged ≥70 years.

PMS44

COST-EFFECTIVENESS OF USE OF BARRICAID® IN LUMBAR DISCECTOMY SURGERY IN TURKEY

Tatar M¹, Senturk A², Dalgali Y³

¹Hacettepe University, Ankara, Turkey, ²Polar Polar Health Economics & Policy, Ankara, Turkey,

³Intrinsic Therapeutics, Inc., Woburn, MA, USA

OBJECTIVES: While widely perceived as a successful procedure, discectomy surgery has a high failure rate over time. The overall risk of recurrent disc herniation varies between 2-18% in reported literature. The Barricaid® anular closure device was designed as an adjunct to lumbar limited microdiscectomy to block large anular defects while maintaining as much native nucleus within the disc space. Patients that are considered for anular closure have a minimum posterior disc height of 5mm, and an intra-operatively measured anular defect between 5mm and 12mm wide. The aim of this study was determined as to assess the cost effectiveness of the use of Barricaid® in this group of patients in Turkey. **METHODS:** A simple decision analysis model was used to assess the cost effectiveness of the use of Barricaid®. The primary clinical endpoint was determined as the number of prevented reherniations. According to the literature, the use of Barricaid® reduced the number of reherniations by 18%. Resource utilization data were obtained via expert clinical opinion and included pre-op, post-op and follow-up costs, etc. Unit costs were taken from the Social Security Institution's official price list. Results were presented as incremental cost/number of prevented reherniations. The comparison was made between using and not using the Barricaid®. **RESULTS:** According to the results of the cost effectiveness analysis, the incremental number of prevented reherniation was 4.398 with Barricaid® and incremental cost was 119.343.000 TL. The ICER was within the limits of the threshold recommended by the World Health Organization with 27.136 TL. **CONCLUSIONS:** Use of Barricaid® in lumbar discectomy surgery is a cost-effective treatment option in Turkey.

PMS45

PHARMACOECONOMIC EVALUATION OF TREATMENT WITH TOCILIZUMAB IN RUSSIAN CHILDREN WITH SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS

Ryazhenov VV, Gorokhova SG, Emchenko IV

I.M. Sechenov First Moscow State Medical University, Moscow, Russia

OBJECTIVES: To evaluate the use of tocilizumab in Russian patients with systemic juvenile idiopathic arthritis (SJIA) in terms of cost-effectiveness and impact on social and economic burden of the disease. **METHODS:** The model was based on TENDER clinical study (De Benedetti F et al., 2012). First, a pharmacoeconomic cost-efficiency of tocilizumab and a standard basic therapy of SJIA were compared. The analysis included direct medical costs in two comparable groups (1st with routine administration of methotrexate and prednisolone, and 2nd with tocilizumab prescribed in case of refractoriness to NSAID and glucocorticosteroids). The efficacy of therapies was evaluated according to ACR criteria. After that, the influence of tocilizumab on cost and burden of illness was assessed. The analysis included direct medical costs and government expenditures on hospitalization, work incapacity insurance, monthly social pensions, benefits for care for a disabled children below 18 y. o. and GDP losses. 12-week time horizon was adopted in the CEA model, and a 1-year horizon for the assessment of burden of illness. **RESULTS:** The cost-effectiveness in terms of ACR 90 and 70 was 4 428 262.96 and 2 952 175.31 RUB for the group of standard treatment, and 1 166 111.66 and 615 218.74 RUB for tocilizumab group. Tocilizumab demonstrated the same benefits in terms of ACR 50, 30. Analysis of burden of illness revealed a different structure of financial expenditures in considered strategies: pharmacotherapy constituted >50% costs in tocilizumab group, but hospitalization costs were 12 times less than in standard therapy. Annual budget losses due to social burden of this disease were 426 144.63 RUB per patient in the group of standard treatment and 226 729.10 RUB in tocilizumab group. **CONCLUSIONS:** The use of tocilizumab in SJIA is justified by better cost efficiency and reduced of social and economic losses of state budget connected with the burden of the disease.

PMS46

COST-EFFECTIVENESS ANALYSIS OF ETANERCEPT IN THE TREATMENT OF RHEUMATOID ARTHRITIS IN PORTUGAL

Mateus C¹, Moura A²

¹Escola Nacional de Saúde Pública, Universidade Nova de Lisboa, Lisbon, Portugal, ²Escola Nacional de Saúde Pública, Universidade Nova de Lisboa, Lisbon, Portugal

OBJECTIVES: The present study aims to estimate the cost-effectiveness of etanercept compared to golimumab in the treatment of patients with Rheumatoid Arthritis (RA) in Portugal. **METHODS:** A model was adapted to assess the cost-effectiveness of etanercept in the treatment of RA. We performed a comparison of the combination of etanercept + methotrexate and golimumab + methotrexate. Dosage of etanercept was 50mg on a weekly basis, whereas for golimumab it was 50 mg once a month. The model is an individual simulation model and takes a lifetime perspective. Outcomes are expressed in QALYs, using the HAQ score