CONCLUSION: HRT is the most cost-effective option, followed by bisphosphonates, for 50-year-old hypothetical females, but some assumptions and limitations apply (including small sample sizes for the calcitomin and raloxifene groups, and a likely selection bias in that bisphosphonate users are more likely to report longer duration of glucocorticoid therapy). Because few guidelines included cost-effectiveness information, consideration of these results may facilitate better management of glucocorticoid-induced osteoporosis.

PMS18
COST-EFFECTIVENESS OF ABATACEPT IN PATIENTS WITH MODERATELY TO SEVERELY ACTIVE RHEUMATOID ARTHRITIS AND INADEQUATE RESPONSE TO METHOTREXATE IN BRAZIL
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OBJECTIVE: Abatacept is a new selective co-stimulation modulator recently approved in Brazil for the treatment of patients with moderately to severely active rheumatoid arthritis (RA) and inadequate response to one or more disease-modifying anti-rheumatic drugs (DMARDs). We estimated the cost-effectiveness of Abatacept in patients with inadequate response to Methotrexate. METHODS: We developed a Markov simulation model to depict progression of functional disability over time in patients with moderately to severely active RA and inadequate response to MTX. Functional disability was expressed in terms of the Health Assessment Questionnaire Disability Index (HAQ-DI). Patients were assumed to receive weekly pulse MTX alone or weekly pulse MTX plus abatacept administered on days 1, 14, and 29, and every 4 weeks thereafter. Costs with drug acquisition, administration and monitoring were considered. Estimations used data from a Phase III clinical trial of abatacept in patients with inadequate response to MTX (AIM) plus secondary data sources. Cost-effectiveness of abatacept was expressed in terms of the incremental cost (2006 Brazil R$) per quality-adjusted life-year (QALY) gained versus MTX therapy alone; lifetime horizons was employed in the analyses. Costs and health effects were discounted at 3% annually. RESULTS: Over the lifetime, abatacept therapy was estimated to yield an average of 1.61 additional QALYs per patient (vs. MTX alone) at a mean incremental cost of R$146,095/QALY (US$83,483, US$1 = R$1.75). CONCLUSION: Abatacept presented the best cost-effectiveness ratio vis-à-vis etanercept, adalimumab, and infliximab, with its incremental costs of R$202,581/QALY, R$189,100/QALY and R$236,479/QALY, respectively vs. Methotrexate alone.

PMS19
COST MINIMIZATION AND BUDGET IMPACT ANALYSIS OF RITUXIMAB VERSUS INFLIXIMAB, ADA LIMUMAB, ETANERCEPT AND ABATACEPT IN RHEUMATOID ARTHRITIS FROM A PAYER PERSPECTIVE IN BRAZIL
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OBJECTIVE: Rituximab is a monoclonal antibody with demonstrated efficacy (REFLEX trial) in rheumatoid arthritis patients who responded inadequately to anti-TNF drugs (Cohen et al. 2006). The study assessed the total cost of rituximab therapy in comparison with infliximab, adalimumab, etanercept and abatacept under a private payer perspective in Brazil. A budget impact analysis was performed. METHODS: This study assumed the same efficacy for all drugs, since there has not been any head-to-head trial available until now, although indirect comparisons show higher ACR response rates for rituximab. Direct annual medical costs for biological drugs, IV administration, weekly methotrexate (MTX) and routine exams were taken from a panel of Brazilian rheumatologists. Base case dosages considered were: rituximab (2 g every 8 months), abatacept (750 mg at weeks 0, 2, 4 and then every 4 weeks), infliximab (4 mg/kg at weeks 0, 2, 6 and every 8 weeks), adalimumab (40 mg every other week) and etanercept (50 mg every week). Local administration costs were obtained from Scheinberg et al. 2005. Costs were reported in 2007 Brazilian Reais and discounted at a 5% rate in the BIA. Therapies were evaluated using a 5-year horizon. In order to assess uncertainty, one and two-way sensitivity analyses were performed. RESULTS: In the base case scenario, rituximab therapy resulted in a total annual cost of R$46,388 per patient. Total annual costs per patient for the comparators were: R$79,394 for infliximab, R$90,331 for adalimumab, R$120,351 for etanercept and R$77,118 for abatacept. In the BIA, rituximab therapy resulted in total savings of R$94,201,413 in 5 years considering the population in the private health care system only. Costs were sensitive to dosage schedule (rituximab, infliximab and abatacept) and drug costs. CONCLUSION: Results of this study suggest that therapy with rituximab is a dominant alternative for patients with rheumatoid arthritis in the Brazilian private health care system.

PMS20
THE ECONOMIC CONSEQUENCES OF RHEUMATOID ARTHRITIS: AN ANALYSIS OF THE MEDICAL EXPENDITURE PANEL SURVEY (MEPS)
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OBJECTIVE: To assess the direct and indirect economic consequences of rheumatoid arthritis (RA) using real-world data. METHODS: Medical Expenditure Panel Survey (MEPS) 2004 data was used to identify non-institutionalized U.S. persons with RA. MEPS is a comprehensive survey of approximately 35,000 individuals consisting of detailed health care resource use expenditures by payer, employment and income, insurance details and quality of life (QoL) information. These data are novel because they are nationally representative, capture the elderly and their expenditure better than managed care databases, and contain direct and indirect costs and QoL measures in the same population. Multiple linear and semi-log regressions were applied to estimate the total annual health care expenditure and income loss associated with RA. Covariates in expenditure equations included demography, comorbidities and overall health status. Semi-log regression for income rendered the distribution of income symmetric. Covariates in the income equations included demography, comorbidities, education, occupation and health status. RESULTS: A total of 136 patients with RA were identified in the data; 76% were women, and 56% were 41–64 years of age. Total annual incremental expenditure associated with RA was $4422 (P < 0.01) with adjusted R^2 of 0.16 in the linear regression and 0.41 in the semi-log regression. 14% of those expenses were paid by the individual or their family, 28% by Medicare, 39% by private insurance and 14% by Medicaid. As expected, deterioration in overall health status increased health care expenditures monotonically. In the income equation (adjusted R^2 = 0.39), persons with RA earned $3,526 less annually (P = 0.03) than the mean income of $26,594 consistent with the US Census Bureau, translating into a 13% decrease. Income increased with education and with improved overall health status. CONCLUSION: Even when controlling for other factors,
the economic impact of rheumatoid arthritis alone is substantial with the indirect productivity or income loss as large as the healthcare costs.

THE RELATIONSHIP BETWEEN COST OF ILLNESS AND DISEASE SEVERITY IN RHEUMATOID ARTHRITIS: RESULTS OF A SYSTEMATIC REVIEW
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OBJECTIVE: To assess the relationship between economic burden and physical functioning or disease severity in rheumatoid arthritis (RA). METHODS: Medline, Embase, BIOSIS, Derwent Drug File, the Cochrane library and NHS-EED were searched on 12th March 2007 for cost-of-illness (COI) and cost-effectiveness studies in RA. RESULTS: A total of 909 unique citations were retrieved. Nine studies presented COI results; with seven studies presenting data on the relationship between direct and indirect costs and physical functioning or disease severity. The Health Assessment Questionnaire (HAQ) was used in three studies to assess functional ability. Higher HAQ scores at baseline were found to be significant predictors of higher future direct costs in two studies. A third study used both HAQ and the Hannover Functional Status Questionnaire (FFbH) to assess functional ability. For patients with an HAQ score <1.2 (or >70% of full FFbH function) the mean annual direct costs were €3223 and indirect costs were €8,811; for patients with an HAQ score between 1.2 and 1.7 (FFbH function of 50 to 70%) mean annual direct costs were €5,661 and indirect costs were €21,580; whilst for patients with an HAQ score higher than 1.7 (FFbH functional status of <50% of normal) mean annual direct costs were €8,403 and indirect costs were €34,915. A further two studies using the FFbH confirmed these findings of increased costs with decreasing functional ability. Finally, in two studies assessing the relationship between disease severity and costs, there was a statistically significant difference (p < 0.001) in both direct and indirect costs for each level increase in disease severity (based on ACR functional classes I, II, III and IV) and increases in costs with increasing disease severity categorised as no disability, mild, moderate and severe. CONCLUSION: The economic burden of RA appears highly dependent on both the level of functional disability and disease severity.

MODELLING OF BURDEN OF FEMORAL NECK FRACTURE IN 2007 FROM PURCHASER’S POINT OF VIEW
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OBJECTIVE: The purpose of this study was to calculate the treatment cost of femoral neck fracture and financial burden of the annual fracture cases at 2007 financial level from health insurance point of view. METHODS: The costs of the treatment of femoral neck fractures are modeled according to the actually NHIFA (National Health Insurance Fund Administration) reimbursed types of care including acute inpatient care, chronic inpatient care, outpatient care, pharmaceuticals and medical devices, home care (nursing), cost of traveling or transport, and sick pay. Cases in which patients were healing following primary treatment (without complications) and cases with complications were examined separately. The financial burden was estimated by using data from international literature and Hungarian studies (number of fractures, mortality, ratio of further treatment, etc.) which were extrapolated for the average health insurance treatment cost of one patient. Yearly average in 2007: USD$1 = 183,83 HUF. RESULTS: The cost of patients in active age-groups cured by primary treatment can vary in a range of USD$5093–USD$7549 depending on cost level of individual care and utilization. The cost of patients with complication (primary treatment and complication) in active age-groups can reach USD$9317–USD$16049, depending on cost level of individual care and utilization. According to our model calculations, the cost of primary treatment of femoral neck fractures and essential further treatment represents an annual burden of USD$22,676,518–USD$32,194,335 for the health insurance system. CONCLUSION: In order to reduce the incidence of neck fractures, one should emphasize the importance of current and future interventions, which projects the possibility of reducing the financial burden at societal level. The real decrease of financial burden can be realized by reducing the risk increasing effect of risk factors of the whole primary treatment on further treatments, following the implementation of well-established and uniform professional decisions.