COHE physicians who more often adopted occupational health best practices had 57% fewer disability days (p = 0.001) compared with patients treated by COHE physicians who less frequently adopted best practices. **CONCLUSIONS:** Physician financial incentives, coupled with care management support, can improve outcomes and reduce costs for patients receiving occupational health care.

Muscular-Skeletal Disorders – Research on Methods

PMS78
MEASUREMENT STRATEGY FOR KYPHOSIS: NEW EVIDENCE FROM PATIENTS AND PHYSICIANS

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OBJECTIVES: Kyphosis due at least one vertebral compression fracture (VCF) is prevalent among osteoporotic patients, resulting in well documented symptoms and impact on functioning and well-being. Assessing health outcomes of interventions concentrates on consequences of back pain, omitting relevant aspects of increased morbidity. A three-part study led to development of a conceptual measurement framework for comprehensive assessment of symptoms, impact and treatment benefits in kyphosis. **METHODS:** We developed a literature-based (PubMed, Medline) Disease Model (DM) for kyphosis for selecting and developing outcome measures, as recommended by regulatory agencies. In-depth interviews were conducted among patients (n=10) and physicians (n=10) to test the DM. Physician respondents were PCPs or specialists currently treating patients with osteoporotic kyphosis. Patient respondents were >50 years old with an osteoporotic VCF >= 90 days prior. Relevant Patient-Reported Outcome instruments (PROs) were evaluated for appropriateness in this population. **RESULTS:** The DM included signs, symptoms, causes/triggers, exacerbations, and functional/well-being impact of kyphosis. The DM content was largely confirmed by all respondents, however patients offered new concepts of emotional and functional impact and clinicians discounted psychosocial concepts (well-being and sleep impairment) and added clinical evaluations of the spinal deformity. Related to these findings, PRO instruments lacked adequate content validity or measurement properties for evaluating kyphosis outcomes. Close matches were the IOF Quality of Life questionnaire (Qualeffo-41) and the Osteoporosis Assessment Questionnaire (OPAQ), though neither includes gastrointestinal or respiratory symptoms. **CONCLUSIONS:** This study confirms the need for more comprehensive assessment of health outcomes in kyphosis, because current approaches omit key concepts (gastrointestinal and respiratory symptoms) and functional impact being a major cost-driver. A comprehensive evaluation of the severity and impact of kyphosis requires clinician evaluation of spinal deformity and patient-report of symptoms (spinal, respiratory, GI) and functional impact and a more complete understanding of the unique information provided by different measurements.

PMS79
MIXED TREATMENT COMPARISON OF BIOLOGIC AGENTS IN PATIENTS WITH RHEUMATOID ARTHRITIS WHO HAVE RESPONDED INADEQUATELY TO METHOTREXATE THERAPY IN THE UNITED KINGDOM

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OBJECTIVES: To compare the clinical effectiveness of abatacept and other biologic Disease Modifying Anti-Rheumatic Drugs (DMARDs), as measured by Health Assessment Questionnaire (HAQ) score, in patients with rheumatoid arthritis (RA) who have responded inadequately to methotrexate (MTX-IR) in the UK environment. **METHODS:** A systematic literature review (conducted in line with UK reimbursement environment) identified controlled trials investigating the efficacy of abatacept (3 studies), adalimumab (2), certolizumab pegol (2), etanercept (2), golimumab(1) and infliximab(2) in MTX-IR patients. The identified trials were comparable in design, included patients, and concomitant treatment (MTX). Mixed treatment comparison analyses were performed on HAQ change from baseline (CFB) at 24 and 52 weeks. Results were expressed as difference in HAQ CFB score between treatments and expected HAQ CFB and the 95% Credible Interval (CrI) per treatment at 24 and 52 weeks. **RESULTS:** The analysis of HAQ CFB at 24 weeks showed that abatacept/MTX is more efficacious than MTX monotherapy (−0.30, 95%CrI:−0.42, −,0.16) and shows small numeric differences versus other biologics/MTX (range:−0.11 to 0.9). The expected mean HAQ CFB at 24 weeks for abatacept (−0.57) was superior to placebo (−0.27) and comparable to all the alternative treatments (adjusted mean between −0.46 and −0.65). The findings at 52 weeks are in line with those at 24-weeks, although no data was available for golimumab. Scenario analyses confirmed the robustness of the findings. **CONCLUSIONS:** Abatacept in combination with MTX is expected to result in a comparable improvement in functional status as measured in HAQ score and ACR responses as other biologic agents in MTX-IR RA patients.

Neurological Disorders – Clinical Outcomes Studies

PND1
ESTIMATING NET HEALTH BENEFITS OF INTRAMUSCULAR INTERFERON BETA-1A AND FINGOLIMOD IN TREATING PATIENTS WITH RELAPSING-REMITTING MULTIPLE SCLEROSIS

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OBJECTIVES: Both intramuscular interferon (IM IFN) β-1a and fingolimod slow reduce progression and relapses among patients with multiple sclerosis (MS). In a head-to-head trial, fingolimod demonstrated greater reductions in relapses, but no difference in progression, compared to IM IFN-β-1a; fingolimod-treated patients were at increased risk of some unintended treatment effects, however. Whether the difference in efficacy between fingolimod and IM IFN-β-1a is offset by the increased risk of unintended effects is unknown. The objective was to estimate the net health benefit (NHB) of IM IFN-β-1a versus fingolimod. **METHODS:** A probabilistic Markov risk-benefit model was developed with three-month cycles and a five-year time horizon (ten years in sensitivity analysis). Model inputs were abstracted from the head-to-head trial, and incorporated intended (preventing progression and relapse) and serious unintended (cardiovascular events, serious infections, and neoplasms) effects of treatment. Utilities for these were discounted at 5% annually, and combined using a minimum model. NHB was expressed in quality-adjusted life years (QALYs) per patient, with 95% credible intervals. **RESULTS:** In a cohort of 1000 patients (mean age, 36 years), the NHB of treatment was 3.76 (3.30-4.08) QALYs with fingolimod and 3.73 (3.24-4.07) QALYs with IM IFN-β-1a over five years. Fingolimod-treated patients accrued slightly more QALYs from intended effects (3.88, vs. 3.82 QALYs for IM IFN-β-1a), but had higher QALY decrements from unintended effects (-0.12, vs. -0.09 QALYs for IM IFN-β-1a). Findings were consistent over a ten-year horizon. **CONCLUSIONS:** Even with greater relapse reduction with fingolimod, both treatments have similar positive NHBs. This was driven by similar disease progression rates between the treatments, and additional risks of unintended effects with fingolimod. This model can assist clinicians and decision makers in quantifying the trade-offs between intended and unintended treatment effects, by jointly incorporating the benefits of slowing progression and reducing relapses, with the risks of adverse events.

PND2
COST OFFSETS AND GAINS IN HEALTH EFFECTS IN THE TREATMENT OF RELAPSING–REMITTING MULTIPLE SCLEROSIS WITH LAQUINIMOD: AN ANALYSIS BASED ON THE ALLEGRO TRIAL

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OBJECTIVES: In the ALLEGRO Phase III clinical trial, 0.6 mg once daily laquinimod, an oral treatment under development for the treatment of relapsing-remitting multiple sclerosis (RRMS), showed a statistically significant 36% reduction in the risk of confirmed disability progression according to the Expanded Disability Status Scale (EDSS) versus placebo, in addition to a significant 23% reduction in the relapse rate. The purpose of this analysis was to investigate health economic implications of these efficacy results. **METHODS:** A computer model was developed to estimate costs and health effects in the treatment of RRMS with laquinimod, allowing for comparison against different treatment alternatives. The model used a 40-year time horizon to capture long-term consequences, assuming that the treatment duration would be 5 years in concordance with many other models in the field. Efficacy data from the ALLEGRO trial and published cost and quality of life data for Sweden were used to populate the model. As there is not yet an established market price for laquinimod, the analysis focused on cost savings and gains in quality of life. Costs and health effects were discounted at an interest rate of 3%. **RESULTS:** Therapy with laquinimod during 5 years resulted in a gain of 0.29 quality adjusted life years and societal cost offsets of EUR 58,000 over the modeled time period (0.11 Euro/Swedish Krona). On average, 0.5 relapses were also estimated to be avoided during the treatment period. Over 40 years, patients spent 1.2 years less at EDSS level 6 and above. The results were stable for reasonable variation of most model parameters. **CONCLUSIONS:** Efficacy data from the ALLEGRO trial and Swedish cost and quality of life data indicated potential cost savings and improved quality of life. The most important driver of these results is the effect on disability progression.

PND3
RISK-BENEFIT ANALYSIS OF THERAPY IN MULTIPLE SCLEROSIS

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OBJECTIVES: To undertake a systematic benefit-risk analysis of glatiramer acetate (GA) in relapse-remitting multiple sclerosis and clinical isolated syndrome using controlled studies, according to the EMA guideline. **METHODS:** We searched PubMed, Embase, the Cochrane Trials Register for eligible articles according to explicit criteria to obtain trials and controlled cohort studies. Fixed and random effects meta-analysis techniques were applied for pooling data. Qualitative and quantitative benefit-risk analyses were performed. **RESULTS:** A total of 4451 patients in 15 studies were included in the meta-analysis. The overall reduction in clinical progression was 40% (RR=0.60, 95%CI: 0.48-0.75) for GA compared with placebo/untreated and 23% (RR=0.77, 95%CI: 0.65-0.92) for GA compared with interferons. The rate of patients free from relapse was higher with GA compared with placebo/standard treatment (RR=1.35, 95%CI: 1.21-1.50) and similar compared with interferons (RR=1.04, 95%CI: 0.98-1.11). For GA compared with interferons there was a13% reduction in discontinuation due to all causes (RR=0.87, 95%CI: 0.72-1.04) and a similar proportion of serious adverse events leading to discontinuation (RR=0.89, 95%CI: 0.56-1.41). Based on these results, for being free from disease progression at 24 months against placebo/untreated, the number needed to benefit was of 22.7 and the risk-benefit ratio was 1.69. Compared with placebo/untreated, the relative net benefit-risk was 9% using a multi-criteria decision analysis.