Among biologic monotherapies, greater ACR20/50/70 responses were observed with TCZ IV than with aTNFs and tofacitinib. When comparing biologics + MTX with biologic monotherapies, ACR20, ACR50, and ACR70 responses with TCZ + MTX were similar to TCZ as monotherapy (OR=1.04, 95% CI, 0.39-2.80; OR=1.28, 95% CI, 0.46-3.51; OR=0.97, 95% CI, 0.38-2.49, respectively). Greater ACR20/50/70 responses were observed with aTNF + MTX than with aTNF monotherapy (OR=2.22; 95% CI, 0.46-10.83, probability better=84%; OR=3.12, 95% CI, 0.60-16.32, probability better=92%; OR=1.39, 95% CI, 0.26-6.78, probability better=68%, respectively). Sensitivity analyses showed conflicting results for the indirect comparison of tofacitinib + MTX versus tofacitinib. **CONCLUSIONS:** Results suggest that most of the novel DMARDs, in combination with MTX, have similar levels of efficacy in DMARD-IR patients. As monotherapy, TCZ is likely to have a greater response than aTNFs and tofacitinib. TCZ monotherapy also shows comparable efficacy compared to TCZ + MTX, whereas aTNFs in combination with MTX showed greater ACR responses compared with aTNF monotherapy at 24 weeks.

PMS6

META-ANALYSIS OF EFFICACY OF ETANERCEPT FOR PSORIATIC ARTHRITIS

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OBJECTIVES: Psoriatic arthritis (PA) is an inflammatory disease affecting joints and connective tissues. The anti-tumor necrosis factor (TNF) biologics are increasingly being used in patients who have failed traditional disease-modifying antirheumatic drugs. Etanercept has shown efficacy in treatment of PA. The objective of this study was to conduct meta-analysis and present total evidence for etanercept in treatment of PA. **METHODS:** For this meta-analysis we included randomized controlled trials (RCTs)evaluating etanercept for the treatment of PS. RCTs studying adult populations with active and progressive PA with an inadequate response to previous DMARD therapy were eligible. Trials conducted among PA populations with prior experience with anti-TNF agents, including an inadequate response, were excluded. A systematic literature search for Etanercept trials was undertaken for the databases Pubmed, Embase, Biosis, Google Scholar, and Cochrane. Data was collected for the study size, interventions, year, and the three outcomes HAQ, PASI and PsARC. For meta-analysis, random effects and fixed effects models were used to obtain cumulative statistics. **RESULTS:** Two RCTs with a total of 131 patients were identified. The pooled response rates for Etanercept for PsARC were 75% (95% CI 60%-90%), for HAQ were 59% (95% CI 46%-72%), and for PASI were 24% (95% CI 13%-34%). The pooled response rates for placebo for PsARC were 30% (95% CI 26%-35%), for HAQ were 5% (95% CI 1%-9%), and for PASI were 3% (95% CI 0%-7%). For PsARC the cumulative relative risk with Etanercept versus placebo was 0.40 (95% CI 33%-48%). For HAQ, the cumulative relative risk with placebo versus Etanercept was 0.08 (95% CI 5%-12%). For PASI, the cumulative relative risk with placebo versus Etanercept was 0.14 (95% CI 8%-20%). **CONCLUSIONS:** Meta-analysis shows Etanercept offers patients with psoriatic arthritis an effective therapeutic option for control of their disease.

PMS7

REAL-WORLD UTILIZATION OF CERTOLIZUMAB PEGOL (CZP) FOR THE TREATMENT OF RHEUMATOID ARTHRITIS (RA) IN THE UNITED KINGDOM

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OBJECTIVES: Certolizumab pegol (CZP) is an anti-TNF approved for rheumatoid arthritis (RA) in the UK. Based on 12 week clinical data, NICE guidance recommends CZP as first-line biologic therapy for RA treatment, in conjunction with a Patient Access Scheme (PAS) providing the initial 12 weeks of CZP free of charge to UK NHS. The objective was to assess real-world CZP utilization. **METHODS:** A retrospective, observational cohort analysis was conducted in four UK Rheumatology clinics. Chart data was collected for biologic-naïve RA patients initiating CZP, followed up to 52 weeks. Reported data included: baseline characteristics, persistence at Weeks 12/24/52, concomitant medication and PAS cost impact. **RESULTS:** 110 CZP patients were analysed. Baseline characteristics: mean age 57.4 years, 65.5% female, mean DAS 6.1. Data was collected for 110, 108 and 82 patients over 12, 24 and 52 weeks, respectively (a certain number of patients' data was only available for portions of the 52-week retrospective follow-up). At baseline, 68.2% patients received concomitant methotrexate, 28.2% oral corticosteroids, and 14.5% CZP monotherapy. Kaplan-Meier persistency estimates were: 95.5%, 82.6% and 71.8% at 12, 24, 52 weeks, respectively. Assuming full compliance with labeled dosing, CZP cost for 52 weeks therapy was £10,368 per patient in England/Wales and £6,793 with the 12 weeks for free PAS applied. This is £2,502 and £2,363 less than comparable annual per-patient costs for etanercept and adalimumab, respectively. **CONCLUSIONS:** CZP persistency appeared consistent with data observed in other observational studies of subcutaneous anti-TNFs. Application of the PAS resulted in a substantial reduction in 1-year costs for CZP therapy in comparison to alternatives. PAS-related savings, adjusted for real-world persistency, will also help provide Payers with data to make informed decisions for options to treat RA. Interpretation of data is limited due to retrospective analysis caveats.

PMS8

IS CHINESE HERB EFFECTIVE ON TREATING MYASTHENIA GRAVIS PATIENTS?

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OBJECTIVES: Myasthenia Gravis (MG) is an auto immune disease of neuromuscular junction, which leads to muscle weakness and influences patients' quality of life (QoL). Treatments for MG patients include thymectomy, acetylcholinesterase inhibitors and immunosuppressant drugs. But in China, Chinese herb is widely used. This study is to prove Chinese herb's efficacy on treating MG patients. **METHODS:** The data is performed on a random double blind clinical trial. Consecutive MG patients are enrolled in three hospitals in China, from July, 2008 to June, 2010. Patients (14≤age≤75 years) with class I, IIa, or IIb MG according to Osserman's classification are enrolled, and are blindly separated into Chinese herb group and control group. The Chinese herb group is treated with *Huangqi* formula and control group with placebo, treatment duration is four weeks. Muscle weakness is assessed by Chinese Score for MG (CSMG; rang 12-60; higher scores worse weakness), and QoL is assessed by the SF-36 (rang: 0-100; higher scores better QoL); Both CSMG and SF-36 are evaluated at the enrollment and after four-week treatment. **RESULTS:** Analysis is based on 248 patients (male 110, 44%; age:46±18 year), of whom 125 patients randomized into the Chinese herb group and 121 finish the treatment; 123 in the control group and 120 finish the study. There is no significant difference in demographic and clinical characteristics between two groups (P>0.05), and no difference in CSMG (Chinese herb vs control groups: 24.1±5.9 vs 23.3±6.6) and SF-36 (55.7±16.6 vs 57.7±16.5) at the baseline either. After four-week treatment, muscle weakness declined 6.4±5.0 in Chinese herb group and 1.0±3.8 in control group (P=0.000). However, no significant changes are found in SF-36 scores between the two groups (56.7±16.1 and 57.1±15.9). **CONCLUSIONS:** This study proves that Chinese herb can relieve MG patients' muscle weakness, but it is not enough to improve patients' QoL in four weeks.

PMS9

FACTORS ASSOCIATED WITH THE INITIATION OF BIOLOGIC DISEASE MODIFYING ANTIRHEUMATIC DRUGS IN TEXAS MEDICAID PATIENTS WITH RHEUMATOID ARTHRITIS

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OBJECTIVES: To examine if: (1) time to initiation (TTI) of biologic DMARD therapy (B-DMARD) differs by non-biologic DMARD (NB-DMARD) type and therapy; and (2) likelihood of initiation of B-DMARD differs by NB-DMARD type and therapy while controlling for covariates. **METHODS:** Texas Medicaid medical and prescription claims from 7/1/03-12/31/10 were extracted for adults (18-63 years) who were diagnosed with rheumatoid arthritis (ICD-9 CM 714.0x) with no use of DMARDs in the preindex period. The index date was the first date of NB-DMARD use. The likelihood of initiating B-DMARDs was compared among on NB-DMARD type [methotrexate(MTX), sulfasalazine(SSZ), hydroxychloroquine(HCQ), leflunomide(LEF)] and NB-DMARD therapy (mono vs. dual), while controlling for demographic factors (age, gender, race), NB-DMARD adherence [proportion of days covered (PDC)≥70% vs. <70%], persistence, pain medication, glucocorticoid use, and Charlson Comorbidity Index score (CCI). Descriptive statistics, Kaplan-Meier, Log-rank test, and logistic regression were utilized. **RESULTS:** The subjects (n=2,714) were 48.1±10.4 years old, primarily female (89.1%), and Hispanic (55.3%). The majority were on pain medications (92.4%), glucocorticoid users (64.9%), and NB-DMARD monotherapy users (86.4%); while, 24.3% initiated on B-DMARDs and 46.7% had a CCI score=1. Compared to TTI (days) of B-DMARDs for MTX (208.3±190.1) users, TTI of B-DMARDs was longer for SSZ (284.5±186.4) and HCQ (256±184.4) users and shorter for LEF users (188.0±205.1);p<0.0001). There were no differences between mono and dual therapy users. After controlling for covariates, regression results showed that compared to MTX, SSZ users were 66.8% less likely (OR=0.322;95%CI=0.237-0.464;p<0.0001) and HCQ users were 79.0% less likely (OR=0.210;95%CI=0.160-0.278;p<0.0001) to initiate B-DMARD therapy. NB-DMARD monotherapy users were 47.5% more likely (OR=1.475;95%CI=1.121-1.940;p<0.0001) to initiate B-DMARD therapy compared to dual therapy users. **CONCLUSIONS:** Time to B-DMARD initiation ranged from 6.3 (LEF) to 9.5 months (SSZ). Patients who used NB-DMARD MTX and those on monotherapy may be more likely to initiate on B-DMARD therapy.

PMS10

COMPARING METHODS OF BIAS ADJUSTMENT FOR META-ANALYSIS OF OBSERVATIONAL DATA TO EVALUATE VERTEBRAL AUGMENTATION PROCEDURES FOR TREATING OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURES

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In April 2013, percutaneous vertebroplasty (PVP) and balloon kyphoplasty (BKP) without stenting—two vertebral augmentation procedures—were recommended by NICE to treat vertebral compression fractures (VCFs) due to osteoporosis (TA279). Although all-cause mortality was assessed as a secondary outcome, evidence from included RCTs did not achieve statistical significance, even when pooled, comparing operated patients (PVP or BKP) to patients receiving only optimal pain management (OPM). The Evidence Review Group stated that the effect of vertebral augmentation on mortality was an important, yet inadequately understood issue, despite evidence of improved survival from recently published large-scale registry studies from Germany and the United States. **OBJECTIVES:** To estimate the mortality differences between treatments for osteoporotic VCFs by pooling randomised and observational data using Cox regression, propensity score matching, as well as, Thompson *et al.*'s (2010) and Welton *et al.*'s (2009) bias adjustment methods. **METHODS:** We extended the random effects meta-analysis from NICE's TA279 to include observational data extracted from German and US (Medicare) insurance claims databases to estimate the mortality effect of PVP versus OPM and BKP versus OPM. All adjustment methods were compared and evaluated using a simple cost-effectiveness model. **PRELIMINARY RESULTS:** Survival hazard ratios were statistically significant, using all methods, in favour of either vertebral augmentation procedures versus OPM. The uncertainty in resulting estimates was artificially inflated to assess the level of uncertainty required to reach <50% probability of cost-effectiveness at common threshold values. Mortality benefit was shown to be a key driver of cost-effectiveness, particularly for BKP. **CONCLUSIONS:** Cox regression and propensity scoring adjustments are reliant on covariate information and thus may not capture all sources of bias; other proposed adjustment methods may play a pivotal role in assessing real-word evidence. An application of these methods to network meta-analysis is currently being undertaken to simultaneously compare operated patients with patients receiving OPM.