reported outcomes (PROs) simultaneously following treatment with certolizumab pegol (CZP) 200 mg + methotrexate (MTX), in the RAPID 1 and RAPID 2 trials. **METHODS:** The proportions of patients reporting improvements ≥MCID in RAPID 1 (Week 24 and Week 52) and RAPID 2 (Week 24) were determined for the following PROs: arthritis pain (0–100 mm visual analogue scale [VAS], MCID ≥ 10 mm), fatigue (Fatigue Assessment Scale, 0–10 numeric rating scale, MCID ≥ 1 point), physical function (Health Assessment Questionnaire-Disability Index, MCID ≥ 0.22 points), patient's global assessment of disease activity (PtGA, 0–100 mm VAS, MCID ≥ 10 mm), and HRQoL (SF-36 physical and mental component summaries [PCS, MCS], MCID ≥ 2.5 points). NNT to achieve improvements ≥MCID in at least 1, 2, 3, 4, 5, or 6 out of the 6 considered PROs simultaneously with CZP + MTX compared with PBO + MTX were also calculated. RAPID 1: NCT00152386; RAPID 2: NCT00160602. **RESULTS:** The NNT to report clinically meaningful improvements in up to 5/6 PROs following CZP + MTX treatment was very low; approximately 2–3 additional patients after 24 weeks (RAPID 1 and RAPID 2). The NNT remained similar at 52 weeks (RAPID 1). The NNT to report improvements in all 6 PROs was 5 additional patients. In patients who achieved MCIDs in at least 5 of 6 PROs by Week 52, clinically meaningful improvements were more likely to be reported in pain, fatigue, physical function and PtGA than SF-36 PCS or particularly MCS. **CONCLUSIONS:** Patients with active RA report meaningful and broad relief in PROs following treatment with CZP. The low NNTs indicate that few patients need to be treated with CZP + MTX to report relief from the multiple burdens of RA.

PMS5

PRIMARY ANTI-TNF FAILURES EXPERIENCE SUPERIOR CLINICAL RESPONSES TO A SECOND ANTI-TNF AGENT THAN SECONDARY FAILURES: ANALYSIS OF THE ALBERTA RHEUMATOID ARTHRITIS BIOLOGICS REGISTRY

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OBJECTIVES: A Provincial prospective observational cohort study observes consecutive Rheumatoid Arthritis (RA) patients starting anti-TNF therapy (infliximab, etanercept or adalimumab). We aimed to assess the impact of switching anti-TNF agents at different time points. **METHODS:** Data in the registry is collected at baseline, 3 months, and every 6 months thereafter up to 3 years on patients receiving anti-TNF agents. We grouped patients as infliximab or adalimumab starters, and etanercept starters. Health-related quality of life was measured with the EQ-5D and single index scores were calculated using US value sets. Clinical outcome measures assessed were the HAQ and DAS28 scores. We analyzed the mean EQ-5D index score, the HAQ score, and the DAS28 score over time within baseline starter groups according to the time of switch of treatment. **RESULTS:** From 1222 patients in the registry, 649 patients had 27 months follow-up assessment and 76.7% remained on the first anti-TNF. For these patients, significant improvement was observed by 3 months in the EQ-5D (mean change 0.296, $P < 0.001$), the HAQ (mean change −0.822, $P < 0.001$) and DAS28 (mean change −2.84 $P < 0.001$) that was sustained over the follow-up period. Those who switched at 3 months (primary failures) had significantly responded by the next measurement and the 27 months changes in outcomes were comparable to non-switchers (all $P < 0.01$). Patients who failed the first anti-TNF after the 3-month time point (secondary failures) obtained from 50% (HAQ) to 68% (EQ-5D) of the mean change compared to non-switchers ($P < 0.05$). Switching from Infliximab or adalimumab to etanercept or vice versa produced similar outcomes. **CONCLUSIONS:** The results show that primary failures to anti-TNF show similar responses to patients responding to their first anti-TNF agent. Secondary failures obtain about two-third of the outcomes compares to no-switchers and primary failures. Longer follow up is needed to see if the secondary failure patients can sustain the obtained improvement.

PMS6

COMPARISON OF RECENTLY REGISTERED BIOLOGICAL DRUGS WITH AVAILABLE THERAPIES IN RHEUMATOID ARTHRITIS: METHODOLOGICAL ISSUES TO CONSIDER FOR META-ANALYSIS

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OBJECTIVES: Rheumatoid arthritis (RA) is a chronic, progressive, disabling autoimmune disease. The first biologic drug (etanercept) for the treatment of RA was registered in 1998, the latest in 2009 (EMEA). Study design of randomized controlled trials (RCT) of RA has changed in the past years, specially in point of reducing the time on placebo. Our aim was to compare the efficacy, safety and tolerability of available biologic drugs and to review the challenges of comparing RA studies with different structures, taking the example of the lately registered drug certolizumab pegol. **METHODS:** Systematic literature search was performed (closed on 16.08.2009) for RCTs with minimum duration of 24 weeks, involving drugs that have been registered for the treatment of RA after traditional disease modifying drug failure. Improvement of symptoms by 20%, 50% and 70% (defined by the American College of Rheumatology, ACR), adverse events and withdrawals were considered as endpoints in the metaanalysis. **RESULTS:** Altogether 14 RCTs (adalimumab 3, certolizumab pegol 2, etanercept 2, infliximab 4, tocilizumab 2, golimumab 1) involving 6739 patients were selected for the analysis. Efficacy of certolizumab pegol was superior to other drugs at ACR20, 50 and 70 but heterogenity was observed at certain safety endpoints. Contrary to previous trials, patients on placebo not achieving ACR20 response at week 16 were withrawn in the certolizumab pegol studies. Thus patient number in the placebo group decreased dramatically for the remaining 8 weeks. To exclude this bias, we compared only the active arms and there was no significant difference in terms of safety and tolerability among the drugs. Analysis by patients years confirmed this finding. **CONCLUSIONS:** Effectiveness and safety of recently registered biologic drugs in RA are similar to the previous agents. Differences in protocol of former and present RCTs should be carefully considered for the analysis.

PMS7

DETERMINANTS OF TNF INHIBITOR DOSE ESCALATION IN PATIENTS WITH RHEUMATOID ARTHRITIS

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OBJECTIVES: Switching among tumor necrosis factor-α inhibitor (TNFi) agents or to another biologic is relatively common, but determinants of dose escalation are largely unknown. Among individuals who are escalating the dose from their first TNFi, we identified factors associated with the choice of dose escalation in a retrospective analysis of medical and pharmacy claims and eligibility data. **METHODS:** Eligible patients were ≥18 years of age, diagnosed with rheumatoid arthritis (RA, 2 diagnoses ≥2 months apart) from January 2003–March 2008, had initiated a new TNFi prescription after a 6-month biologic-free period and had at least 6 months of continuous enrollment. Kaplan-Meier (KM) analysis and Cox regression were used to analyze time to dose escalation. Multinomial logistic regression was used to determine factors affecting dose escalation. **RESULTS:** A total of 11,903 (6.9%) of 173,533 RA patients were identified. Among these patients, 16% (n = 1,903) after a mean of 261 days escalated their dose. Comorbidity scores, such as the severity index for rheumatoid arthritis (SIFRA) and Elixhauser, were higher for patients who escalated their dose. The likelihood of escalating the dose was increased by female sex, younger age, and baseline use of corticosteroids or cytotoxic agents. Baseline use of methotrexate raised the likelihood of dose escalation (relative risk ratio, 1.58). **CONCLUSIONS:** After initiating TNFi treatment, many RA patients failed to remain on therapy and escalated doses or switched to a second TNFi or another biologic ~1 year. Factors influencing whether patients increased their dose included gender, age, and use of certain agents at initiation of the TNFi. a limitation of this study is that patients with <6 months of TNFi treatment were not included.

PMS8

OCCURRENCE OF SECUNDARY HIP AND FEMUR FRACTURES ACCORDING TO RISK FACTORS FOLLOW-UP 8 YEARS

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OBJECTIVES: The aim of this study is to evaluate the occurrences of secundary hip and femur fractures according to its different risk factors with follow up 8 years. **METHODS:** In this retrospective study the data derive from the financial database of the Hungarian National Health Insurance Fund Administration, based on the 10th revision of the International Classification of Diseases (ICD) with ICD code S7200. The patients included into the study had femur neck fracture and being discharged from the hospital after the primary treatment in 2000. The patients with polytrauma were excluded from the study. We evaluated data according to sex, age, type of fracture, type of surgery, local complications, type of residence. **RESULTS:** A total of 3783 patients met selection criteria of primary femoral neck fracture. During the postoperative 8 years 347 patents (9,2%) had secondary hip and femur fractures. Average age of patient with primary hip fracture 78 years, with secundary hip fracture 80,6 years. We demonstrated the following incidence rate of secundary hip fractures according to risk factors: *Sex:* female: 10,3%, male: 5,8%. *Age groups:* 60–69 y: 5,3%, 70–79 y: 7,5%, 80–89 y: 12,4%, 90 y-: 14,1%. *Type of fracture:* lateral: 6,9%, medial 9,5%. *Type of surgery:* osteosynthesis: 8,5%, arthroplasty: 13,6%. *Local complications:* yes: 10,6% no: 9%. *Type of residence:* capital 11,5%, village: 7,9%, city: 10%, town: 8,2%. **CONCLUSIONS:** The secondary hip fracture rate increased with the age of patients. The secondary hip fracture rate was the highest in female, in patient with primary intracapsular femoral neck fracture, after arthroplasty, in patient with local complication, in patient with capital residence. Many other factors can influence this secondary hip fractur, which will be analyzed in our further studies.

PMS9

TREND OF HIP FRACTURE INCIDENCE IN BELGIUM BETWEEN 2000 AND 2007 AND FUTURE PROJECTIONS

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OBJECTIVES: The primary aim of this study was to assess the incidence of hip fractures in Belgium between 2000 and 2007 and to examine secular changes within this period. a secondary aim was to estimate the expected number of hip fractures in Belgium until 2050. **METHODS:** The incidence of hip fractures was determined using the national database of hospital bills, which fully cover the annual hospital stays in the whole of the country. Population data and projections were derived from official sources. Logistic regression including year and age classes was performed for both