"Ethical principles of medical research involving human subjects" (2000), the requirements of GCP, the applicable national legislation.

Results: Among patients with RA frequency of the genotypes was as follows: TT – 37.2%, TC – 42.6%, CC – 20.3%. Age, seropositivity and the duration of the disease were not differing in patients with RA, carriers of the different genotypes of eNOS. Though, CC genotype was associated with high disease activity according to DAS28-ESR >5.2 (OR=9.60; 95% CI 2.18–42.2), HAQ >2 (OR =2.38; 95% CI: 0.94–6.02) and extraarticular manifestations (OR =3.26; 95% CI 1.40–7.56).

After 12 weeks treatment we estimated, that among patients with TT genotype there were 58.3; 16.7; and 8.3% responders ACR20; ACR50; ACR70, and among patients with CC genotype - 20.0; 10.0; 0.0% ($p<0.05$). TC heterozygotes patients had lower (by 22–25%, $p<0.05$) clinical response to the treatment by DAS28 and HAQ than the homozygotes TT.

Conclusions: eNOS T-786C gene promoter polymorphism influence on the efficacy of the treatment, and CC genotype can be considered as a possible predictor of a low response to the treatment in patients with rheumatoid arthritis.

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SAT0697 PREVALENCE OF HEPATITIS B AND C INFECTION AND REACTIVATION IN PATIENTS RECEIVING BIOLOGIC IV THERAPIES

K. Arévalo Ruales¹, B. Soler Bas², J. Ivorra Cortes¹, E. Grau Garcia¹, E. Vicens Bernabeu¹, E. Labrador Sánchez¹, J.J. Frago Gil¹, R. González Mazario¹, C. Alcañiz Escandell¹, I. Cánovas Olmos¹, I. Chalmeta Verdejo¹, C.M. Fedec Olmos¹, L. Gonzalez Puig¹, I. Martínez Cordellat¹, C. Nájera Herranz¹, R. Negueroles Albuxech¹, J.E. Oller Rodríguez¹, F.M. Ortiz-Sanjuan¹, J.A. Román Ivorra^{1,2}. ¹Rheumatology Department, HUP la Fe; ²Medical School, UCV, Valencia, Spain

Background: With the use of biological therapy, cases of reactivation of hepatitis B (HBV) and C (HCV) have been described, consequently its use has to be carefully evaluated. In some cases these therapies have to be administered together with antiviral treatment. Despite the fact that before the beginning of the biological therapy the screening of HBV and HCV virus is done, during the course of treatment serologies are no longer used to detect seroconversions.

Objectives: To analyze the prevalence of HBV and HCV in patients with rheumatic disease at the beginning of biological therapies. To identify the cases of hepatitis reactivation.

Methods: Retrospective observational analysis of the biological treatments administered to patients with rheumatic Disease of the rheumatology department of La Fe hospital, during the period 2000–2015 who had HBV and/or HCV serology at the beginning of treatment. Demographic data and diagnosis of the patient, months of treatment and the results of the serologies performed at the beginning and in the follow-up of the treatment, and the cases of reactivation of hepatitis have been collected.

Results: A total of 388 patients were selected of which 62.4% were female; the mean age at diagnosis of was 38.96±14.36 years. 49.5% of the patients were diagnosed with rheumatoid arthritis (RA), 25.3% of ankylosing spondylitis (AE), 18.6% of psoriatic arthritis (APSO) and 6.7% with other diagnoses. The mean treatment time with patients' biological therapy is 200±118 months (3–464 months), and the mean time between the two serologies is 172±102 months (18–460 months). An incidence of 10% of cases with HBV infection (39 patients) is observed. The serological pattern was 8 cases with Ac-core (+) HBV/Ac-surface (-)/Ag-surface (-) HBV and 31 HBV/Ac-surface (-). The incidence of HCV at the start of treatment was 1.1% (4 patients). A case of reactivation (12.5%) was detected among the 8 patients with Ac-core (+)/Ac-surface (-)/Ag-surface (-) HBV. The patient had infliximab and methotrexate, and reactivation was observed after 12 years of treatment. No reactivation of HCV has been detected.

Conclusions: In our series of patients the incidence of HBV and HCV has been 10% and 1.1%, respectively. One of the 8 patients with Ac-core (+)/Ac-surface (-)/Ag-surface (-) HBV, had reactivation of the virus.

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SAT0698 DISEASE ACTIVITY DURING AND AFTER PREGNANCY IN WOMEN WITH AXIAL SPONDYLOARTHRITIS

K. Ursin^{1,2}, S. Lydersen³, J. Skomsvoll¹, M. Wallenius^{1,2}. ¹National Advisory Unit on Pregnancy and Rheumatic Diseases, St. Olavs Hospital - Trondheim University Hospital; ²Department of Neuromedicine and Movement Science; ³Regional Centre for Child and Youth Mental Health, NTNU, Norwegian University of Science and Technology, Trondheim, Norway

Background: Studies on disease activity of ankylosing spondylitis in pregnancy

have shown diverging results. A large retrospective study from 1998 without validated disease activity scores found no particular pattern of disease course during pregnancy (1). Later two small studies demonstrated a tendency towards lower disease activity in the beginning of pregnancy and deterioration in late pregnancy (2,3). None of these studies included women with non-radiographic axial spondyloarthritis. The only large study was conducted before the widespread use of biological DMARDs.

Objectives: The aim of this project was to prospectively study disease activity in women with axial spondyloarthritis before, during and after pregnancy with BASDAI as disease activity measure.

Methods: RevNatus is a Norwegian nationwide register designed for the follow-up of pregnant women with rheumatic diseases. RevNatus included 181 full term pregnancies in 168 women with axial spondyloarthritis between 2006 and 2016. The women had seven visits at a rheumatology unit; before pregnancy, in each trimester, and six weeks, six months and twelve months postpartum. BASDAI-values from each visit were analyzed in a linear mixed model.

Results: Even though we found a statistically significant relationship between disease activity and time point in the follow-up period, our study demonstrated that women with axial spondyloarthritis had stable, low disease activity during and after pregnancy. Disease activity in second trimester was significantly higher than six weeks after delivery, but the change in estimated mean BASDAI was small (BASDAI 3.97 vs. BASDAI 3.46, $p=0.005$). The figure below shows changes in disease activity throughout the study period.

Conclusions: Studying women with axial spondyloarthritis, we found that disease activity was highest in second trimester, but altogether stable in the period from planning pregnancy to one year after delivery.

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SAT0699 RAPID ASSESSMENT PREDICTS DISEASE ACTIVITY IMPROVEMENT IN NEWLY DIAGNOSED RHEUMATOID ARTHRITIS (RA)

M. Yates¹, J. Galloway¹, N. Snowden², S. Norton¹, J.M. Ledingham³, E.M. Dennison⁴, A. Rivett⁵, A.J. Macgregor⁶. ¹Academic Rheumatology, King's College London, London; ²Rheumatology Dept, Pennine MSK Partnership, Oldham; ³Rheumatology Dept, Portsmouth Hospitals NHS Trust, Portsmouth; ⁴MRC, Southampton University, Southampton; ⁵BSR, The British Society for Rheumatology, London; ⁶Rheumatology Dept, Norfolk and Norwich University Hospital, Norwich, United Kingdom

Background: Early intervention in RA is associated with improved outcomes in randomised trials. UK guidelines stipulate that those with suspected RA are assessed by a rheumatologist within 3 weeks of referral. However, there are limited real world data confirming the value of early assessment. Previous work suggests social deprivation predicts severe disease at presentation and a worse

clinical course (1). The impact of deprivation in early assessment has yet to be characterised on a national level.

Objectives: To investigate if rapid assessment in secondary care associates with achieving a good treatment response, and if this is modulated by social deprivation.

Methods: An audit, designed as a prospective longitudinal observational study, was conducted to assess early RA care. All NHS providers in England and Wales were required to participate. Follow up data were captured over 3 months for subjects with a diagnosis of RA. Rheumatologist assessment within 3 weeks of referral was the predictor variable. The primary outcome was good EULAR DAS response; the secondary outcome was meaningful improvement in RAID score. Logistic regression was used to estimate for associations. Confounders including age, gender, baseline DAS28 and RAID scores were considered in analyses. The index of multiple deprivation (IMD) rank was calculated for each individual based on super-output geographical areas. The IMD rank was then stratified into quintiles and included as a confounder.

Results: 136 of 146 eligible trusts submitted data. 11,752 subjects consented, 5,622 were diagnosed with RA. 94/5622 (1.7%) had incomplete assessment date data. DAS28 response was available for 2234/5622 (39.7%), and RAID response for 901/5622 (16%). The table shows baseline characteristics and response for subjects with complete data. Assessment within 3 weeks associated with a significantly greater improvement in DAS28 and RAID scores, with an adjusted odds ratio for a good EULAR response 1.38 (1.15–1.66) and meaningful RAID reduction 1.44 (1.03–2.02).

	Seen within 3 weeks	Not seen within 3 weeks	P Value
N	878	1356	
Age (SD)	58.6 (14.8)	59.9 (14.1)	0.046*
Female (%)	65.2	64.4	0.24**
White British (%)	86	88.9	0.015**
Current smoker (%)	21.1	25.4	0.009**
IMD quintile mean	3	3	
DAS28 EULAR good response (%)	43.7	35.8	0.001**
DAS28 EULAR moderate response (%)	31.2	35	
DAS28 EULAR no response (%)	25.1	29.1	
Achieved MCI [†] RAID (%)	48	40.7	0.026*

*t-test; **chi-squared. [†]Minimal clinically important difference (reduction by 50% or absolute reduction >3).

Conclusions: These real world data confirm rapid assessment significantly predicts treatment response, in terms of clinical disease activity and patient reported outcomes. Amongst those who were assessed within 3 weeks of referral, an additional 8% achieved a good EULAR response. The association with RAID response was strengthened when social deprivation was included as a confounder. The relationship between IMD and RAID response appears to be non-linear and requires further study.

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SAT0700 COMPARATIVE RISK OF RESPIRATORY DEPRESSION IN PATIENTS TREATED WITH OPIOIDS FOR NON-MALIGNANT PAIN

M. Jani¹, K. Kopec-Harding¹, M. Lunt¹, W.G. Dixon^{1,2,3}. ¹Arthritis Research UK Centre for Epidemiology, University of Manchester, Manchester; ²Rheumatology department, Salford Royal NHS Foundation Trust, Salford; ³Health eResearch Centre, University of Manchester, Manchester, United Kingdom

Background: Opioid use for non-cancer pain has increased considerably over the last 30 years. The U.S. Food and Drug Administration announced several boxed warnings in 2016 to highlight serious opioid-related risks (1) in an effort to reduce fatal overdoses, 80% of which are unintentional (2). The most serious opioid related adverse event is respiratory depression (RD), which can be potentially fatal. There are few data on the incidence of RD in opioid users for non-malignant pain and no comparative data between drugs.

Objectives: To assess the comparative risk of RD in new users of opioids for non-malignant pain using routinely collected electronic patient records (EPR).

Methods: Opioid users from Salford hospital EPR were identified between 2014–2016. Patients with prior malignancy were excluded on the basis of ICD-10 codes and health issues. Those with prior history of opioid use were excluded using keyword searches within the medicines reconciliation document. The primary analysis was on drug + 1 day lag window, unless patient switched to another opioid. Exposure was categorised as opioid monotherapy by drug or combination of opioids (so that RD events could be assigned to a single exposure category). Electronic National Early Warning Scores, used to regularly monitor physiological parameters during inpatient visits, were used to classify RD. An RD event was defined as any one of the following: respiratory rate (RR) ≤8/min, RR ≤10/min and oxygen saturations<94%, RR ≤10/min and altered consciousness, or dispensed naloxone use. Crude rates per 1000 person years of follow up were calculated and Cox proportional hazards models were used to examine the comparative risk of dispensed opioids and RD. Patients contributed follow up time for a particular

drug from dispensed drug start date until day after discontinuation, first RD event, death or end of last hospital admission (by 31/05/16).

Results: 8007 opioid users were included in the study, 3,976 female (50%) and a mean age (SD) of 53 (21) years. There were 255 RD events observed on treatment, 87 with severe respiratory depression (RR <8/min), 114 requiring naloxone and 3 respiratory arrests. Patients on fentanyl, morphine, oxycodone and combination treatment had the highest crude rates of RD (table). In the age and gender adjusted Cox-model, using codeine as the referent, patients on fentanyl, morphine, oxycodone and combination opioids had the highest risk of RD [(table), adjusted HR (95% CI) for combination opioids: 2.22 (1.56, 3.16)]. Compared to morphine, combination opioids had an adjusted HR of 1.52 (1.09, 2.13).

Opioid (no. of patients)	Codeine (n=4,638)	Fentanyl (n=577)	Morphine (n=3,783)	Oxycodone (n=1,740)	Tramadol (n=189)	Alfentanil (n=372)	Buprenorphine (n=93)	Combination (n=3,175)
Mean age (years, SD)	51 (20)	62(20)	48 (18)	68 (18)	48 (18)	52 (17)	75 (17)	49 (19)
Females (%)	50	49	49	55	49	35	66	50
Median follow up per patient (days)	7 (3-15)	12 (6-24)	8 (4-15)	14 (7-28)	15 (7-36)	37 (17-78)	36 (21-67)	9 (5-19)
Number of RD events	63	11	79	37	2	2	1	60
Crude rate per 1000 patient years (95% CI)	58 (46, 75)	120 (66, 217)	89 (72, 111)	102 (74, 141)	40 (10, 160)	70 (17, 283)	61 (9, 433)	152 (118, 195)
Hazard ratio (95% CI)	Ref	1.99 (1.05, 3.77)*	1.49 (1.06, 2.07)*	1.79 (1.19, 2.69)*	1.05 (0.26, 4.31)	0.48 (0.12, 1.98)	1.73(0.24, 12.51)	2.23 (1.56, 3.17)*
Age and gender adjusted hazard ratio (95% CI)	Ref	2.05 (1.08, 3.90)*	1.46 (1.05, 2.03)*	1.99(1.31, 3.03)*	1.03 (0.25, 4.20)	0.45 (0.11, 1.86)	1.83 (0.25, 13.24)	2.22 (1.56, 3.16)*
Hazard ratio (95% CI)	0.67 (0.48, 0.94)*	1.34 (0.71, 2.51)	Ref	1.21 (0.82, 1.78)	0.71 (0.17, 2.89)	0.33 (0.08, 1.32)	1.16 (0.16, 8.39)	1.50 (1.07, 2.10)*
Age and gender adjusted hazard ratio (95% CI)	0.69 (0.49, 0.95)*	1.40 (0.74, 2.65)	Ref	1.37 (0.91, 2.06)	0.70 (0.17, 2.87)	0.31 (0.08, 1.27)	1.25 (0.17, 9.06)	1.52 (1.09, 2.13)*

* p<0.05

Conclusions: Fentanyl, oxycodone, morphine monotherapy have a significantly higher risk of RD than codeine, but these are not significantly different from each other. Combination opioids confer the highest risk of RD, compared to both codeine and morphine. The strengths of this study include capture of real time physiological parameters to define RD and dispensed medication use (rather than prescribed) to define exposure.

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SAT0701 TOWARDS DIAGNOSIS-SPECIFIC LIFETIME RISKS FOR TOTAL HIP ARTHROPLASTY REVISION SURGERY

M. Gademán¹, L.N. van Steenberghe², S.C. Cannegieter³, R.G. Nelissen⁴, P.J. Marang-van de Mheen⁵. ¹Orthopaedics/ Clinical Epidemiology, LUMC, Leiden; ²Dutch Arthroplasty Register (LROI), 's Hertogenbosch; ³Clinical Epidemiology; ⁴Orthopaedics; ⁵Medical Decision Making, LUMC, Leiden, Netherlands

Background: An important aspect regarding optimal timing of primary hip arthroplasty (THA) is to weigh the benefit associated with the primary surgery at a certain point in time against the risk for revision surgery. Revision surgery should be avoided, as outcomes after revision surgery are less favourable than outcomes after primary surgery. Information on lifetime revision risks is needed to guide decision making for individual patients regarding timing of primary surgery.

Objectives: Our aim was to provide the 7 year cumulative percentages for revision surgery stratified for diagnosis, sex, type of fixation and age at which primary THA was performed.

Methods: Data on arthroplasties was available from the Dutch Arthroplasty Register (LROI), a nationwide population-based registry with information on all joint arthroplasties in the Netherlands from 2007 onwards. For the current study, all patients who received a primary THA in the period 2007 to 2015 were included except patients with a metal on metal prosthesis, patients with a hybrid or reversed hybrid fixation type or patients with revision surgery without primary surgery registered. Revision surgery was defined as any change of one or more components of the prosthesis. For the current study age at primary surgery, diagnosis, sex, type of fixation (uncemented, cemented) and survival (alive/dead) and revision of prosthesis (yes/no) were extracted from the LROI database.