To assess the effects of rituximab on immunoglobulin levels and incidence of infection among patients on rituximab
Methods: Data was collected of all (N=105) patients who received Rituximab between May 2014 until April 2015 at the Haywood Hospital where patients attend for Rituximab injections.
Data was collected retrospectively from the Diamond System, Medisec system and Clinical Information System and entered onto an excel spread sheet which included following details
- Start date of Rituximab
- IgG levels prior to Rituximab and current IgG levels
- Total doses of rituximab and frequency of IgG monitoring
- Intermittent infections and type of infections.

Results: We observed that 82 out of 105 patients were started on rituximab after February 2011 when the BSR guidance was published and 53 out of 105 patients had their immunoglobulin levels checked prior to commencing rituximab
35/76 (46%) patients had 1 or more episodes of infections whilst on Rituximab which required treatment. Of these, 16 (46%) had recurrent infections.
39 patients had dropped their IgG levels after starting rituximab 18 (46%) of these suffered from infections.
17 patients had a drop in IgG ≥20% and 6 of these (36%) had recurrent infections and 1 patient had 1 episode of infection.
None of the patients had dropped their IgG levels below 5
Conclusions: A significant number of patients (35/76 =46%) had 1 or more episodes of infections despite IgG levels being above lower normal limit
Among patients who dropped their IgG levels had increased number infections. Also they had more than 1 episodes of infection
Patients who dropped IgG levels ≥20% suffered with recurrent infections
References:
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AB0400 EFFICACY AND SAFETY OF INTRAVENOUS AND SUBCUTANEOUS TOCILIZUMAB IN A COHORT OF PATIENTS AFFECTED BY RHEUMATOID ARTHRITIS IN REAL-LIFE

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Background: Tocilizumab (TCZ) is a humanized monoclonal anti-interleukin-6 receptor antibody, used for the treatment of moderate to severe rheumatoid arthritis (RA). Although TCZ has been proved to be highly effective and safe in RA patients in large clinical trials, few data are available from real-life practice [1].
Objectives: To evaluate efficacy, safety and retention rate of intravenous (IV) and subcutaneous (SC) TCZ in a real-world setting.
Methods: We evaluated patients affected by moderate-to-severe RA and treated with TCZ from April 2010 to January 2017. Data of patients treated with IV-TCZ until January 2017 were collected retrospectively, while patients treated with either IV or SC-TCZ from January 2015 were included in a prospective cohort and assessed for disease activity, treatment discontinuation and/or onset of adverse events (AEs). DAS28-CRP, CDAI and SDAI scores were used for disease activity assessment and paired t test was used for statistical analysis. Treatment retention rate was estimated by Kaplan-Meier method.
Results: We evaluated 100 patients, 58 treated with IV-TCZ (8 mg/kg every 4w), 16 with SC-TCZ (162 mg every week), 26 switched from IV to SC during followup and 6 of these returned to IV-TCZ for cutaneous intolerance (80 females, median age 63 y, median duration of disease 11 y, median follow-up 16 months). Seventy-eight patients (78%) were treated with monotherapy and twenty-two (22%) in combination with methotrexate. At baseline, disease activity was severe in 87% of patients, moderate in 6% and mild or inactive in 7%; at the latest follow-up 60% of patients are in clinical remission. The mean DAS28-CRP in IV-TCZ and SW-TCZ groups considered as a whole was 4.34 at baseline and 2.71 at the latest follow-up available ($p<0.0001$). In the SC-TCZ group, mean basal DAS28-CRP was 3.70 vs 1.89 measured at the latest follow-up ($p<0.0001$). Fifty-three patients (53%) discontinued TCZ because of inefficacy (19), AEs (13) or other reasons (21, mostly lost to follow-up). Infections were the most frequent AE (45.1/100 person-years), 3 cases of severe pneumonia, one required treatment discontinuation. Infusion reactions were reported in 6/58 IV-TCZ patients, while injection site reactions in 14/42 SC-TCZ patients. Six of these intolerant patients were subsequently treated with i.v. tocilizumab without reactions. We observed an overall high retention rate of IV-TCZ and SW-TCZ (91.1%, 81.2%, 70.6%, 61.3%, 57.1% and 50% at 1, 2, 3, 4, 5, and 6 years respectively). The retention rate of SC-TCZ patients at 3 years was about 77%. The difference between IV/SW-TCZ and SC-TCZ groups was not significant (Fig. 2).
Conclusions: TCZ is effective, well tolerated and safe in a population of RA patients followed in a real-life setting.
No unexpected AE was observed in this large population followed for a long period. Interestingly retention rate was not affected by the administration route and in real life many patients can safely shift across different administration modalities.
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AB0401 THE EFFICENT REGULATION OF TOCILIZUMAB FOR THE EXPRESSION OF CD4+/CD8+ T/CD19 + B CELLS AND THE IMMUNOGLOBULIN IN SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS

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Objectives: To study the influence of tocilizumab on lymphocyte subsets, immunoglobulin and biochemical indicators of Systemic juvenile idiopathic arthritis.
Methods: DMARDs poor efficacy in children with severe SJIA 18 patients were divided into two groups, of which eight patients tocilizumab + DMARDs group (in cluding a case of refractory MAS), 10 patients in the placebo + DMARDs control group, according to the weight>30kg, 8mg/kg, <30kg, 12mg/kg, injected once every two weeks in hospital.Symptoms and CD3 +, CD4 +, CD8 + T, CD19 + B, CD16 + 56-NK cell ratio in two groups were observed by the flow cytometry before or after 12 weeks treatment. Comparing immunoglobulin IgG, IgM, IgA, IgE with baseline after the therepy in two group, and continuous observe inflammatory markers (CRP, ESR, FER, WBC) and ALT/AST changes, adverse reactions and reduce stopping hormone case inductive analysis in following 12 weeks.
Results: After 12 weeks, tocilizumab + DMARDs group, CRP, ESR, FER were significantly decreased, the most frequently occurring adverse reaction was infection, mostly upper respiratory tract infection, followed by elevated transaminase, cholesterol, low-density lipoprotein High-density lipoprotein and triglyceride levels increased; two groups no serious adverse events (three-line reduction, severe infections, etc.). the proportion of CD4 + T, CD19 + B cells in Tocilizumab group were lower than baseline ($P<0.05$), CD8, CD3 + T cells were increased in comparing with baseline, however,no significant change with CD16 + 56-NK cells ($P>0.05$), and immunoglobulins IgG, IgM, IgA lower than baseline ($P<0.05$). The control group had no significant difference ($P>0.05$).
Conclusions: Tocilizumab can significantly reduce inflammatory markers (CRP, ESR, FER), but affect lipid metabolism and ALT/AST.Blocking IL-6 can be adjusted hyperthyroidism humoral and regulate CD4 + T, CD19 + B cells, reduce joint destruction. Tocilizumab can effectively control the development of DMARDs poor efficacy SJIA.
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AB0402 RITUXIMAB MAY DELAY THE MOVEMENT OF RHEUMATOID ARTHRITIS PATIENTS ON CARDIORENAL CONTINUUM: RESULTS FROM A PROSPECTIVE OBSERVATIONAL SINGLE-CENTRE COHORT STUDY

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Background: Similarities in risk factors, initial stages, progression and final stage of both atherosclerotic cardiovascular disease (CVD) and chronic kidney disease (CKD) allowed formulating a concept of cardiorenal continuum.[1] CVD and CKD remain the main causes of mortality in rheumatoid arthritis (RA) patients.[2,3]
Objectives: We aimed to evaluate the effects of rituximab biologic therapy on cardiorenal continuum of RA patients.
Methods: Biologics-naïve RA patients (n=50; age 55.1±10.3) were followed up for 72 months after commencing and continuing rituximab therapy (1–10 standard courses) compared with 30 control RA patients (age 53.2±9.8).
Results: At year 6, rituximab patients have fewer incidences of hypertension, anxiety/depression, atherosclerosis and diastolic dysfunction than control patients (Table).
There were no significant differences in frequencies of other risk factors, signs of asymptomatic multiorgan damage and cases of established heart, cerebrovascular and renal diseases/complications.
Conclusions: Rituximab may be effective in delay of the movement of RA patients on cardiorenal continuum. The clinical implications of rituximab for cardiorenal correlations in RA patients need to be confirmed in large-scale clinical outcome trials.
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Abstract AB0402 – Table 1. Cardiorenal continuum features of rheumatoid arthritis patients (%)

	Features	Rituximab group			Control group			P_{R-C}
		1 year, n=50	3 years, n=47	6 years, n=31	1 year, n=30	3 years, n=26	6 years, n=16	
Risk factors	Hypertension	50.0	38.3	25.8 p_{6-1}=0.028	40.0	38.5	50.0	p_6=0.032
	Dyslipidaemia	44.0	36.2	38.7	40.0	46.2	50.0	>0.05
	Pre-diabetes	52.0	36.2	41.9	33.3	34.6	56.3	>0.05
	Metabolic syndrome	12.0	6.4	3.2	10.0	7.7	12.5	>0.05
	Diabetes mellitus	4.0	0	0	0	0	0	>0.05
	Anxiety/depression	83.2	41.5 p_{3-1}=0.006	35.3 p_{6-1}<0.001	80.0	73.1	68.8	p_3=0.009 p_6=0.008
Initial stages	Atherosclerosis	32.0	21.3	12.9 p_{6-1}=0.048	40.0	34.6	37.5	p_6=0.02
	Left ventricular hypertrophy	8.0	4.3	0	6.7	7.7	0	>0.05
	Diastolic dysfunction	48.0	38.3	22.6 p_{6-1}=0.022	46.7	50.0	56.3	p_6=0.04
	Albuminuria	8.0	0	0	0	0	6.3	>0.05
	Kidney impairment	6.0	2.1	0	13.3	0	0	>0.05
Progression	Angina	6.0	0	0	3.3	0	0	>0.05
	Chronic kidney disease	16.0	8.5	9.7	13.4	0	0	>0.05
End stage	Myocardial infarction/stroke	0	0	0	0	0	0	>0.05
	Heart failure	2.0	0	0	0	0	0	>0.05
	Acute/chronic renal failure	0	0	0	0	0	0	>0.05
	Death	0	0	12.9	0	0	0	>0.05

Disclosure of Interest: None declared
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AB0403 ADHERENCE AND ACCESS TO BIOLOGICAL THERAPY AND TOFACITINIB IN A COHORT OF COLOMBIAN PATIENTS WITH RHEUMATOLOGICAL DISEASES

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Background: Biological disease-modifying antirheumatic drug (bDMARD) and tofacitinib are highly effective, but with different pharmaceutical forms, adverse reactions and cost that could affect adherence therapy and drug access.
Objectives: To determine patient adherence and administrative access to the treatment with bDMARDs and tofacitnib in patients with rheumatological diseases in Colombia.
Methods: A retrospective cohort study, which included all patients in management with bDMARD and tofactinib initiated between July 1, 2015 and June 30, 2016. A monthly follow-up of the administrative adherence were evaluated by holding or applying the medication, as well as the application of Morisky-Green test in self-administered oral and subcutaneous therapies (non-adherent patient was considered when at least one doses is lost), other variables such as sociodemographic, comorbidities, and co-prescriptions were evaluated. A descriptive analysis, χ^2 for comparison and multivariate logistic regression were performed.
Results: A total of 1102 patients were evaluated, with a mean age of 52.8±15.4 years and a female predominance (72.8%). The most frequent comorbidities were hypertension (22.6%) and dyslipidemia (15.9%). The most prescribed drugs studied were adalimumab (31.9%), etanercept (22.2%) and tofacitinib (12.5%). 52.8% use conventional DMARDs and 42.2% use glucocorticoids. Global adherence was 66.3% as measured by Morisky-Green test. Adherence was better with self-administered subcutaneous drugs every week or longer, compared to daily dosing of oral drug; these data are detailed in table 1. In 42.4% of the patients, at least one delay per year in the application or dispensation occurred, leading to 36.1% of patients experiencing dose losses due to difficulties in access. The main reason (23%) for delays and dose losses is the failures by health-insurance companies to allow timely access to the therapy. In the multivariate analysis treatment with adalimumab or tofacitinib was associated with a greater probability of presenting delays in access after adjustment of variables.

Drug	(n)	(%)	Drug administration route and interval	Morisky-Green test adherence (%)	At least one dose application delay in the year of follow up (%)	Missed dose (%)
Adalimumab	351	31.9	SC – Every two weeks	74.8	62.7	51.3
Etanercept	245	22.2	SC – weekly	72	27.3	22.4
Tofacitinib	138	12.5	OA – every 12 hours	48.8	52.2	52.2
Golimumab	82	7.4	SC - monthly	64.7	32.9	28
Rituximab	66	6.0	IV - biannual and annual	Not apply	3.0	1.5
Certolizumab	58	5.3	SC - monthly	83.3	32.8	32.8
Infliximab	40	3.6	IV - monthly and every two months	Not apply	35.0	27.5
Abatacept	62	5.6	IV y SC - monthly and weekly	42.9 - (SC route)	38.7	27.4
Tocilizumab	60	5.4	IV y SC - monthly	50.0 - (SC route)	36.7	33.3

Conclusions: Subcutaneous self-applications of bDMARD have better adherence rates compared to oral drug. However, the limitations in access to treatment decrease the adherence. On the other hand the impact of the adherence could be major in the case of self-administered DMARD when weekly or longer intervals doses are lost, compared with the loss of one daily dose of tofacitinib.

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AB0404 SIMILAR REMISSION RATES AMONG RHEUMATOID ARTHRITIS PATIENTS TREATED WITH ANTI TNF AND NON-ANTI TNF THERAPIES: REAL-LIFE DATA

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Background: Several biological DMARD (bDMARD) therapies have been approved for use in rheumatoid arthritis (RA) and are classified according to their respective therapeutic target: Anti TNF therapies and non-Anti TNF therapies. They are very effective in most of patients but their comparative efficacy in daily clinical is less well known.
Objectives: Our aim was to compare the efficacy of anti-TNF therapies vs non-Anti TNF therapies in a cohort of Colombian RA patients followed in different arthritis clinics under daily clinical practice conditions.
Methods: We conducted a cross-sectional study including with RA patients treated at Medicarte IPS from March 2009 to December 2016. Medicarte is a referral center for the integral medical care and pharmaco-surveillance of patients under biologic therapies in 13 cities in Colombia for inflammatory arthropathies, mainly RA, psoriatic arthritis and spondyloartropathies. Clinical information was obtained from electronic clinical records and medical claims. Only those patients with disease activity scores (DAS-28) at baseline and at the last visit were included. Remission was defined as DAS-28 <2.6 on the last visit. Patients treated only with conventional DMARD and/or tofacitinib were excluded.
Results: A total of 1,020 patients with RA were identified. 844 patients (88% female) were included in the final analysis, 416 patients with anti TNF and 428 with non-anti TNF therapies (Rituximab 199, Tocilizumab 125 and Abatacept in 104 patients). The mean age was 55.2±11.8 years, with a mean disease duration

Table 1. General Characteristics of patients with RA under bDMARD therapy

	Total N=844	Anti TNF N=416	Non-Anti TNF N=428	p value
Gender (female) %	88.0	88.7	87.6	NS
Age (years, SD)	55.2±11.8	55.0±11.8	55.4±11.8	NS
Disease duration (years, SD)	15.2±9.5	15.0±9.9	15.5±9.0	NS
bDMARD therapy duration (years)	3.2±2.5	3.2±2.5	3.2±2.4	NS
First line bDMARD therapy,%	64.0	75.2	53.2	p<0.001
Combined therapy, %	83.0	90.9	75.0	p<0.001
Seropositive (either CCP and/or RF) %	80.1	82.0	78.3	NS
DAS-28 at baseline (± SD)	4.3±1.1	4.20±1.14	4.4±1.21	NS
HAQ at baseline (± SD)	1.13±0.77	1.09±0.78	1.16±0.77	NS