Methods: SSDM is a novel mobile tool of disease management. The patients were trained to master SSDM by health care professionals and conducted their DAS28 and HAQ self-assessments. The data were synchronized to the mobile of physicians and uploaded onto cloud for analysis.

Results: From Jun 2014 to Jan 2019, 44,698 RA patients from 587 hospitals in China used SSDM, of which 32,058 patients made 67,845 DAS28 and HAQ self-assessments. The T2T rates were 27% at baseline, and 60% after 6 months among 4,768 patients who have been followed up longer than 6 months.

In 25,820 assessments of patients who achieved T2T at baseline or repeat assessments, 76% (19,552) assessments had normal physical function (HAQ = 0), but 24% (6,268) were with HAQ score higher than 0, which mean score for 8 functional tests was 3.67, indicating physical dysfunction. The "Bend down to pick up clothing from the floor" was the one being affected most, with a mean score of 0.81, significantly higher than other functional test score, $P < 0.001$. The mean numbers of tender and swollen joints among T2T patients were 1.53 and 1.32 respectively. The analysis of correlation between physical dysfunction and the affected joints showed the knees were the major contributor to the mismatch, following by wrist and shoulders. Table 1 showed the mean scores for each functioning category in HAQ and the top target joints.

In patients who did not achieve T2T, 32% had HAQ scores of 0, showing that these patients had normal physical function despite failure in achieving T2T. The mean number of tender and swollen joints in these patients was 4.31 and 2.85, respectively. The affected joints were mainly hand joints. According to the cluster weights for the impacts of affected joints on physical function, the weighted coefficient of affected joints impacting factors (IF) on physical function was obtained. The highest IF was for knee (4), followed by wrist (3.4), shoulder (2.3), middle finger (2.1), elbow (2), index finger (2), other fingers (1), respectively.

Conclusion: 1/4 RA patients suffer from physical dysfunctions even though T2T are achieved. Diseased knees, wrists and shoulders are the top three joints that lead to corresponding physical dysfunctions and contribute to a mismatch between T2T and HAQ. Conversely, diseased elbow and finger joints are less likely to cause physical dysfunction. Therefore, not all joints are equal. Joints of knees, wrists and middle fingers deserve higher IF (2.1-4) in evaluation of disease activity. T2T guided by current DAS28 lead to mismatch with HAQ and may be misleading. A modified DAS28 should be considered with IF and a special attention should be paid on these top three joints for rehabilitations.

Table

Table 1. The mean scores for each functioning category in HAQ and the top 3 target joints.

	Mean score	Knee	Wrist	shoulder	middle finger	elbow	Index finger	Other fingers
1 Dress yourself including shoelaces and buttons	0.43		0.43	0.34	0.22			0.12
2 Get in and out of bed	0.3	0.3	0.24	0.15				
3 Lift a full glass to your mouth	0.32		0.32	0.26	0.16			
4 Walk outdoors on flat ground	0.38	0.38	0.3	0.19				
5 Wash and dry your body	0.48		0.48	0.38		0.24		
6 Bend down to pick up clothing from the floor *	0.81*	0.81	0.65	0.42				
7 Turn faucets (or coxes) on and off	0.47		0.47		0.38		0.24	
8 Get in and out of a car	0.48	0.48	0.38	0.24				
Total scores	3.67	1.97	3.27	1.98	0.76	0.24	0.24	0.12
Mean score	0.46	0.49	0.41	0.28	0.25	0.24	0.24	0.12
impact factors		4	3.4	2.3	2.1	2	2	1

* $p < 0.001$

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AB0291

SHORT TERM EFFECTIVENESS OF JANUS KINASE INHIBITORS AND BIOLOGIC DRUGS IN RHEUMATOID ARTHRITIS PATIENTS FROM THE APULIAN REGISTRY BIUPURE

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Background: Randomized clinical trials have provided evidence that janus kinase inhibitors (Jak-i) induce a quick response in patients affected with rheumatoid arthritis (RA), especially in terms of perception of pain.

However, a few data are available on this issue in RA patients upon treatment with Jak-i in the settings of real life.

Objectives: We aimed at evaluating the early clinical response in RA patients treated with Jak-i or biologic disease modifying drugs (bDMARDs) from the Apulian registry BIUPURE.

Methods: We retrospectively evaluated patients with RA, according to 2010 ACR/EULAR Criteria, who begun Jak-i or biologic drugs from December 2017 (since baricitinib was available onto the market) through December 2018. We included 189 patients (female 146, 77.25%) with age (mean $\pm$ SD) of 57.8 ± 12 years. Of them, 143 (75.6%) were treated with bDMARDs, whereas 46 (24.3%) were on JAK Inhibitors, namely baricitinib or tofacitinib (Table 1). Disease activity score on 28 joints (DAS28) and reported pain on a 0-100 visual analogue scale (VAS) were estimated at baseline, 3 and 6 months. Intra-group changes from baseline of DAS28 and VAS-pain was assessed by t-test. Mean difference changes in VAS-pain at 3 months between Jak-i and bDMARDs were compared by t-test. Possible predictors of the achievement of EULAR good-response at 3 months were estimated by binary logistic multiple regression analysis.

Table 1. Frequency of different Jak-i and bDMARDs

	n	%
Tofacitinib	4	2.12
Baricitinib	42	22.22
Abatacept	43	22.75
Adalimumab	13	6.88
Anakinra	1	0.53
Certolizumab	18	9.52
Etanercept	17	8.99
Golimumab	5	2.65
Infliximab	4	2.01
Rituximab	4	2.12
Tocilizumab	38	20.11
Total	189	100.00

Results: Considering the whole cohort, mean DAS28 at baseline was $3.70 (\pm 1.4)$ and significantly decreased to $2.76 (\pm 1.1)$ at 3-months ($p < 0.001$) and to $2.99 (\pm 1.4)$ at 6-months ($p < 0.001$). Likewise, VAS-pain was significantly improved from baseline, either at 3 and 6 months ($p < 0.001$). Also VAS-pain significantly decreased in patients on treatment with Jak-i (3 months $p = 0.0001$, 6 months $p = 0.008$) and bDMARDs (3 months $p = 0.0001$, 6 months $p = 0.009$). Of note, mean difference from baseline of VAS pain at 3 months was significantly higher in patients treated with Jak-i than in those on bDMARDs ($p = 0.0005$) (Figure 1). An EULAR good response was reached by 37.5% at 3 months and by 56.4% of patients at 6 months. In particular, patients with JAK Inhibitors met this goal at 3 months significantly more frequently than others ($p = 0.003$). EULAR good response at 3 months was strongly associated with Jak-i treatment (OR 3.1, 95%CI 1.4-6.6).

Conclusion: Despite the usual flaws of the analysis from registries, such as comorbidities, concomitant therapies, adherence, different disease activity or line of treatment, our study suggests that Jak-i allow to achieve an early clinical benefit in terms of patient reported pain at greater extent than classical bDMARDs in real-world.

Figure 1. Comparison of mean difference at 3 months from baseline between Jak-i and bDMARDs.

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AB0291B

A COMPARISON OF THE JOINTS ULTRASONOGRAPHY IN THE PATIENTS WITH RHEUMATOID ARTHRITIS TREATED BY BIOLOGICAL AGENTS AND THE CORRESPONDING SYNOVIAL HISTOLOGICAL FINDINGS

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Background: In the treatment of Rheumatoid arthritis (RA), early diagnosis and early treatment with tight control have become increasingly important with the advent of biological therapy. Ultrasonography (US) of the various joints enables the real-time evaluation of synovial hypertrophy, effusion and bone erosion, Power Doppler (PD) ultrasound is able to identify both subclinical synovitis and early erosive disease.

Objectives: The objectives of this study were to investigate whether the image of US at the operated joint reflect synovium histological findings or clinical indicators, and to compare the results in the patient treated by non-biological agent (NonBio) and biological agent (Bio)

Methods: RA related orthopaedic surgery was performed at 1287 joints including 17 shoulders, 160 knees, 96 elbows, 378 wrists, 364 fingers, 38 ankles and 234 toes during the period between January 2011 and December 2018 at our rheumatic center. Preoperatively, ultrasound evaluations were performed and grade of PD signal was determined at the part with the highest signal. PD signal consists 4 grades from grade 0 to 3. The operations were performed within one week after the ultrasound evaluations. Rooney score of the synovium histology, DAS28-ESR (4), MMP-3, CRP were investigated. Rooney score represents the histologic features in the synovium of RA. It includes 6 features i.e. synovio-cytes hyperplasia, fibrosis, proliferating blood vessels, perivascular infiltrates of lymphocytes, focal aggregates of lymphocytes, diffuse infiltrates of lymphocytes. They were scored separately on a scale of 1-10. The treatments that the patients received included: biological agents (Bio) (n=389 30%), etanercept (ETN) (n= 102), tocilizumab (TCZ) (n=105), infliximab (IFX) (n=29), adalimumab (ADA) (n=28), certlizumab pegol (CZP) (n=12), golimumab (GLM) (n=56), and abatacept (ABT) (n=55), tofacitinib (TOF) (n=2).

Results: PD signal (0.97±0.88), DAS28 (3.23±1.13), CRP(0.5±1.25 mg/dL), MMP-3 (119.0±119.0 ng/mL) and Rooney score (23.5±7.7) in the patients treated with Bio were significantly lower than those (1.39±0.95, 3.66±1.07, 0.78±1.37 mg/dL, 146.3±150.0ng/dL, 28.5±9.26) in the patients treated with NonBio. Rooney score fibrosis (9.57±1.44) in patients treated with Bio was significantly higher than those (8.64±2.48) in patients treated by NonBio. Rooney score, synovio-cyte hyperplasia (1.16±1.26) and three items of lymphocyte (1.59±2.91, 1.68±2.54, 1.11±2.20) in patients treated with Bio were lower than those (1.72±1.30, 3.79±3.56, 3.73±3.53, 2.40±2.98) in patients treated with NonBio. TCZ, ADA, ABT and IFX had some significant differences for Rooney score and Rooney item score between the patients treated with NonBio.

Conclusion: The activity of RA synovitis at operated site was suppressed in patients treated with Bio. There were some differences in clinical data, histological score, PD signal and DAS28 among Bio.

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AB0291C

REMISSION IN RHEUMATOID ARTHRITIS: CONSIDERING NEW CUT-POINTS OF COMPOSITE DISEASE ACTIVITY INDICES ACCORDING TO THE ABSENCE OF SYNOVITIS BY ULTRASONOGRAPHY

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Background: Achieving the state of remission in RA according to currently available criteria does not entirely prevent patient from radiological progression. On the contrary, the presence of subclinical synovitis by means of ultrasonography (US) correlates with radiological progression.

Objectives: To establish cut-off values of composite disease activity indices (DAS28-CRP, DAS28-ESR, CDAI and SDAI) that adjust better to remission according to the absence of synovitis by US.

Methods: Observational, cross-sectional study that included 126 patients with diagnosis of RA who were in remission or low disease activity (DAS-ESR ≤3.2). For each patient we calculated the DAS28-ESR, DAS28-CRP, CDAI, SDAI. For US assessment we used the 12 joint simplified score. We considered the state of remission by US if synovial hypertrophy (SH) ≤1 and power Doppler (PD) signal= 0 in all joints. The cut-off values of the disease activity indices to define remission according to the proposed US definition of remission were determined by ROC curves.

Results: Patients had a median (ICR) DAS28-ESR of 2.32 (0.60), DAS28-CRP= 1.89 (0.55), CDAI= 3.56 (3.0) and SDAI= 3.0 (4.7). The sensitivity, specificity, positive and negative predictive value of each of the selected cut-off points for the DAS28-CRP, DAS28-ESR, CDAI and SDAI for the definition of remission are shown in the Table.

Conclusion: In this study we describe new cut points of the different composite disease activity indices for the definition of remission. These cut points improve the accuracy of the definition of remission. However, they differ scarcely from the reference values making its impact uncertain in the long term management of patients with RA. Longitudinal studies are, therefore, warranted in order to elucidate the performance of these new cut points.

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Cut-off values	Sensitivity% (IC95%)	Specificity% (IC95%)	PPV% (IC95%)	NPV% (IC95%)
Taking as reference SH definition of remission.				
DAS28-ESR	81 (70-88)	50 (37-63)	68 (58-77)	66 (51-78)
≤2.6	65 (54-75)	63 (56-73)	70 (58-80)	58 (45-69)
≤2.5				
DAS28-CRP	86 (76-92)	26 (16-39)	61 (51-70)	58 (39-76)
≤2.6	57 (45-68)	55 (41-68)	63 (51-74)	48 (36-61)
≤2.0				
CDAI	61 (50-72)	74 (61-84)	76 (64-85)	59 (47-70)
≤2.8	60 (48-70)	74 (61-84)	75 (63-85)	58 (46-69)
≤2.1				
SDAI	52 (40-63)	72 (59-82)	71 (58-82)	53 (42-64)
≤3.3	52 (41-64)	80 (68-89)	78 (64-88)	55 (44-66)
≤3.0				
Taking as reference the PD definition of remission.				
DAS28-ESR	71 (61-80)	43 (28-59)	76 (66-84)	37 (25-52)
≤2.6	58 (48-68)	60 (44-74)	79 (68-87)	36 (25-48)
≤2.5				
DAS28-CRP	80 (71-87)	17 (8-33)	72 (62-79)	25 (18-45)
≤2.2	64 (53-73)	56 (40-71)	79 (68-87)	38 (26-52)
≤1.96				
CDAI	55 (44-64)	47 (38-56)	85 (73-92)	38 (28-50)
≤2.8	53 (43-63)	74 (58-86)	84 (73-92)	38 (27-50)
≤2.15				
SDAI	46 (36-56)	71 (55-84)	81 (68-89)	34 (24-48)
≤3.3	46 (36-57)	82 (67-92)	87 (74-94)	33 (28-49)
≤3.0				