burden of 1.7 (SD±0.8), 57 GI reactions (9.8%, 41 pts) with an average burden of 2.9 (SD±1.1), 102 SK reactions (17.5%, 64 pts) with an average burden of 2.9 (SD±1.1) and 109 INFs (18.7%, 79 pts) with an average burden of 3.3 (SD±1.0). Prevalence of INJ and GI reactions was significantly higher among ETN users than among ADA users (INJ: 76 ADRs/265 ETN users (28.7%) vs 30 ADRs/196 ADA users (15.3%), $P=0.007$; GI: 30/265 (11.3%) vs 9/196 (4.6%), $P=0.01$). The prevalence of INFs and SK reactions did not differ. The perceived burden of GI reactions was higher for ETN than for ADA users (3.1 ± 1.0 vs 2.0 ± 0.7 , $p=0.006$) but did not differ for other clustered ADRs. The number of patients using other bDMARDs was too low for further analysis. Prevalence of bDMARD-induced headache was 1.9% (12 ADRs/583 pts) with an average burden of 3.4 (SD±0.9). Prevalence of bDMARD-induced fatigue was 4.3% (25 ADRs) with an average burden of 2.7 (SD±1.0).

Conclusion: Almost half of the RA patients reported bDMARD-induced ADRs. From the patients' perspective INJ reactions have the highest prevalence with a relatively low burden, whereas INFs and headache are less prevalent but give the highest burden of the analysed ADRs. Further studies are required to obtain more insight into the perceived differences in ADRs between bDMARDs.

Disclosure of Interests: Jette van Lint: None declared, Naomi Jessurun: None declared, Sander W. Tas: None declared, Harald Vonkeman: None declared, Bart van den Bernt Grant/research support from: UCB, Pfizer, Abbvie; Speakers bureau: Pfizer, AbbVie, UCB, Biogen, Sandoz, Consultant for: UCB, Novartis and Pfizer, Astrid van Tubergen: None declared, Michael Nurmohamed Grant/research support from: AbbVie, Bristol-Myers Squibb, Celgene, Eli Lilly, Janssen, Menarini, MSD, Mundipharma, Pfizer, Roche, Sanofi and UCB, Speakers bureau: AbbVie, Bristol-Myers Squibb, Celgene, Eli Lilly, Janssen, Menarini, MSD, Mundipharma, Pfizer, Roche, Sanofi and UCB, Eugène van Puijenbroek: None declared

DOI: 10.1136/annrheumdis-2019-eular.5330

FRI0098

SWITCHING RATE OF BIOLOGICAL DMARDS IN RHEUMATOID ARTHRITIS PATIENTS: TREASURE – REAL LIFE DATA

Umut Kalyoncu, Ali İhsan Ertenli, Abdulsamet Erden, Orhan Küçükşahin, Timuçin Kaşıfoğlu, Ediz Dalkılıç, Cemal Bes, Nilüfer Alpay Kanitez, Hakan Emmungil, Pamir Atagündüz, Belkis Nihan Coşkun, Burcu Yağız, Süleyman Serdar Koca, Muhammet Çınar, Aşkın Ateş, Servet Akar, Onay Gercik, Duygu Ersözülü, Veli Yazısız, Gezmiş Kimyon, Müge Aydın, Rıdvan Mercan, Burak Öz, Nazife Sule Yasar Bilge, Zeynel Abidin Akar, Omer Karadag, Ayse Bahar Kelesoglu Dincer, Sedat Yilmaz, Ufuk İlgen, Yavuz Pehlivan, Ender Terzioğlu, Levent Kılıç, Şükran Erten, Sedat Kırız. *On Behalf of Treasure biological registry, Ankara, Turkey*

Background: In rheumatoid arthritis (RA), biologic DMARDs are important treatment options in resistant patients. Inefficacy or side effects may cause switching between these drugs.

Objectives: This study aimed to determine features of patients switching from one biologic DMARD to another in RA treatment and to investigate associated reasons for switching.

Methods: This multicenter, prospective observational cohort study used the Treasure database in which web-based registration of RA and spondyloarthritis patients are being performed in 15 centers across different regions of Turkey. In this study, data of RA patients switching from one biologic agent to another were analyzed. Demographic and clinical data, follow-up duration, time to switch, and reasons for switching were retrieved from the database.

Results: Of the included 2115 RA patients, 829 (39.2%) switched between biologic agents (switched group) and 1286 (60.8%) continued to receive their current therapies (continued group). The median follow-up duration of all patients was 3.7 years and the median time to switch was 1.1 years. In the switched group, the proportion of females and the median HAQ-DI score were higher as well as disease duration was longer (Table 1). Among the biologic agents used at first, 60.9% of the patients were receiving an anti-TNF agent and 39.1% of the patients were receiving other biologic agents (Table 2, figure 1). In the switched group (n=829), the main reasons for switching were secondary inefficacy (n=269), primary inefficacy (n=238), and side effects (n=178) followed by primary or secondary unknown inefficacy (n=30), patient's demand (n=21), physician's request (n=16), willing to be pregnant (n=7), other (n=31), and unknown (n=54).

Table 1. Demographic and clinical features of the study groups

	N	Switched Group	N	Continued Group	P
Age, year, median (min-max)	829	54 (19-84)	1286	55 (18-91)	0.121
Sex, n (%)					0.003
Female		688 (83.0)		1000 (77.8)	
Male		141 (17.0)		286 (22.2)	
Body mass index, median (min-max)	823	27.74 (14.33-66.1)	1256	28.05 (15.59-58)	0.640
Disease duration, year, median (min-max)	806	12 (0-43)	1245	8 (0-41)	<0.001
ESR, mm/h, median (min-max)	538	34 (2-120)	1029	33 (2-174)	0.311
CRP, mg/dL, median (min-max)	533	15.7 (0.04-335)	1019	14.7 (0-11062)	0.859
RF positivity, n (%)	776	508 (65.5)	1193	785 (65.8)	0.878
Anti-CCP positivity, n (%)	585	345 (59.0)	945	582 (61.6)	0.309
Swollen joint count, median (min-max)	250	3 (0-24)	612	3 (0-32)	0.994
Tender joint count, median (min-max)	253	6 (0-30)	609	7 (0-44)	0.217
PtGA-VAS, median (min-max)	432	70 (0-100)	954	70 (0-100)	0.347
Pain-VAS, median (min-max)	345	70 (0-100)	879	70 (0-100)	0.142
Fatigue-VAS, median (min-max)	337	70 (0-100)	873	70 (0-100)	0.066
HAQ-DI score, median (min-max)	300	1 (0-3)	832	0.9 (0-2.95)	0.040
CDAI score, median (min-max)	115	15.5 (0-72)	293	21.5 (0-89)	0.117
SDAI score, median (min-max)	113	37.5 (1.72-137)	290	43 (2-389)	0.057

Table 2. Distribution of the biologic agents used at first and second and the rate of patients switching to another biologic agent

Biologic agents used at first	n (%)	Biologic agents used after switch	n (%)
Etanercept	482 (22.8)	Adalimumab	152 (18.3)
Adalimumab	404 (19.1)	Etanercept	135 (16.3)
Abatacept	265 (12.5)	Rituximab	140 (16.9)
Rituximab	234 (11.1)	Tocilizumab	103 (12.4)
Tofacitinib	209 (9.9)	Abatacept	101 (12.2)
Infliximab	152 (7.2)	Tofacitinib	61 (7.4)
Golimumab	136 (6.4)	Certolizumab	51 (6.2)
Certolizumab	115 (5.4)	Infliximab	44 (5.3)
Tocilizumab	114 (5.4)	Golimumab	38 (4.6)
Anakinra	4 (0.2)	Anakinra	4 (0.5)

Figure 1. Switching pattern of the switched group

Conclusion: The patients in the Treasure database were followed-up approximately 4 years and about one-third of the patients had to switch from one biologic DMARD to another. The main reasons for this switching were primary (29.2%) and secondary (33.0%) inefficacy and 20% of the patients had to switch due to side effects. According to the switching pattern, about half of the patients using an anti-TNF agent at first switched to another anti-TNF agent and the other half switched to other biologic agents.

Disclosure of Interests:

Umut Kalyoncu Grant/research support from: MSD, Roche, UCB, Novartis and Pfizer, Consultant for: MSD, Abbvie, Roche, UCB, Novartis, Pfizer and Abdi Ibrahim, Speakers bureau: MSD, Abbvie, Roche, UCB, Novartis, Pfizer and Abdi Ibrahim, Ali İhsan Ertenli: None declared, Abdulsamet Erden: None declared, Orhan Küçükşahin: None declared, Timuçin Kaşıfoğlu: None declared, Ediz Dalkılıç Grant/research support from: MSD and Abbvie, Consultant for: MSD, Abbvie, Roche, UCB, Pfizer and Novartis, Speakers bureau: MSD, Abbvie, Roche, UCB, Pfizer and Novartis, Cemal Bes: None declared, Nilüfer Alpay Kanitez: None declared, Hakan Emmungil Grant/research support from: MSD, Roche, Pfizer, Abbvie, Consultant for: Novartis, Roche, Speakers bureau: MSD, Roche, Pfizer, Abbvie, Celltrion, Novartis, Pamir Atagündüz: None declared, Belkis Nihan Coşkun: None declared, Burcu Yağız: None declared, Süleyman Serdar Koca: None declared, Muhammet Çınar: None declared, Aşkın Ateş: None declared, Servet Akar Grant/research support from: MSD, Abbvie,

Roche, UCB, Novartis, Pfizer, Amgen, Consultant for: MSD, Abbvie, Roche, UCB, Novartis, Pfizer, Amgen, Speakers bureau: Pfizer, Onay Gericik: None declared, Duygu Ersözülü: None declared, Veli Yazısız: None declared, Gezmiş Kimyon: None declared, Müge Aydın: None declared, Ridvan Mercan: None declared, Burak Öz: None declared, Nazife Sule Yasar Bilge: None declared, Zeynel Abidin Akar: None declared, Omer Karadag: None declared, Ayse Bahar Kelesoglu Dincer: None declared, Sedat Yilmaz: None declared, Ufuk İlgen: None declared, Yavuz Pehlivan: None declared, Ender Terzioğlu: None declared, Levent Kiliç: None declared, Şükran Erten: None declared, Sedat Kiraz: None declared
DOI: 10.1136/annrheumdis-2019-eular.5279

FRI0099

PREDICTIVE FACTORS FOR REMISSION ACHIEVEMENT BY TOCILIZUMAB MONOTHERAPY IN PATIENTS WITH RHEUMATOID ARTHRITIS AFTER INADEQUATE RESPONSE TO METHOTREXATE: A POST HOC ANALYSIS OF THE SURPRISE STUDY

Masaru Kato¹, Yuko Kaneko², Yoshiya Tanaka³, Masayuki Inoo⁴, Hitomi Kobayashi-Haraoka⁵, Koichi Amano⁶, Masayuki Miyata⁷, Yohko Murakawa⁸, Hidekata Yasuoka², Shintaro Hirata⁹, Hayato Nagasawa⁶, Eiichi Tanaka¹⁰, Nobuyuki Miyasaka¹¹, Hisashi Yamanaka¹⁰, Kazuhiko Yamamoto¹², Isao Yokota¹³, Tatsuya Atsumi¹, Tsutomu Takeuchi².

¹Hokkaido University, Department of Rheumatology, Endocrinology and Nephrology, Sapporo, Japan; ²Keio University School of Medicine, Tokyo, Japan; ³University of Occupational and Environmental Health, Kitakyushu, Japan; ⁴Utazu Hospital, Ehime, Japan; ⁵Nihon University School of Medicine, Tokyo, Japan; ⁶Saitama Medical University, Kawagoe, Japan; ⁷Fukushima Red Cross Hospital, Fukushima, Japan; ⁸Shimane University Faculty of Medicine, Izumo, Japan; ⁹Hiroshima University Hospital, Hiroshima, Japan; ¹⁰Tokyo Women's Medical University, Tokyo, Japan; ¹¹Tokyo Medical and Dental University, Tokyo, Japan; ¹²The University of Tokyo, Tokyo, Japan; ¹³Hokkaido University, Department of Biostatistics, Sapporo, Japan

Background: Interleukin (IL)-6 pathway inhibitors are suggested by European League Against Rheumatism recommendations to have some advantages in rheumatoid arthritis (RA) patients who are not suitable to use methotrexate as comedication compared with other biological disease-modifying antirheumatic drugs. However, it remains to be elucidated what predicts remission achievement by IL-6 pathway inhibitor monotherapy.

Objectives: To identify predictive factors for clinical and structural remission by tocilizumab without methotrexate in patients with RA.

Methods: This is a post hoc analysis of the SURPRISE study, a 2-year randomized, controlled study comparing the efficacy of tocilizumab with (ADD-ON) and without methotrexate (SWITCH) in active RA patients despite methotrexate therapy. The primary endpoint was the DAS28-ESR remission (< 2.6) at week 24. The change in modified total Sharp score from baseline to week 52 (Δ mTSS/year) was also assessed as an endpoint. The effect of clinical parameters, including serum levels of CRP, IL-6, serum amyloid A (SAA), MMP-3, RF and IgG at baseline, on the achievement of DAS28 remission at week 24 was estimated by logistic regression analysis. Multivariate analysis was performed after adjusting for age, gender, height, body weight, body mass index, disease duration, the dose of glucocorticoids, and that of methotrexate.

Results: In SWITCH (n = 96), CRP, SAA, RF and DAS28 at baseline showed predictive value for DAS28 remission at week 24 in univariate analysis. Multivariate analysis confirmed SAA, RF and DAS28 at baseline, but not CRP, as predictive factors, with SAA having the highest value (OR [95%CI] by decrease of 5.0 μ g/mL = 1.011 [1.002-1.020], p = 0.01, ROC-AUC = 0.731). SAA of < 50.0 μ g/mL showed extremely high predictive value for DAS28 remission (OR [95%CI] = 6.012 [1.997-18.096], p = 0.0008, ROC-AUC = 0.761). Furthermore, structural remission (Δ mTSS/year $\leq$ 0.5) rate at week 52 was significantly higher in patients with SAA of < 50.0 μ g/mL than those with SAA of $\geq$ 50.0 μ g/mL (71% vs 51%, p = 0.048). In contrast, in ADD-ON (n = 98), only DAS28 at baseline showed predictive value for DAS28 remission at week 24 in both univariate and multivariate analysis. In patients with SAA < 50.0 μ g/mL, both DAS28 remission (75% vs 77%, p = 0.79) and structural remission (71% vs 68%, p = 0.71) rate were comparable between SWITCH and ADD-ON.

Conclusion: SAA levels at baseline can predict the necessity of concomitant methotrexate in tocilizumab initiation in patients with RA. Patients with low levels of SAA at baseline may benefit similarly from tocilizumab therapy with and without methotrexate in terms of achieving clinical and structural remission.

REFERENCE:

- [1] Kaneko Y, et al. Ann Rheum Dis. 2016 Nov;75(11):1917-1923. Kaneko Y, et al. Ann Rheum Dis. 2018 Sep;77(9):1268-1275.

Disclosure of Interests: : Masaru Kato Grant/research support from: GSK, Actelion, Speakers bureau: GSK, Actelion, Bayer, Nippon Shinyaku, Eli Lilly, Chugai, Pfizer, Ayumi, Eisai, Asahi Kasei, Yuko Kaneko Grant/research support from: Abbvie, Eisai, Speakers bureau: AbbVie, Astellas, Ayumi, Bristol-Myers Squibb, Chugai, Eisai, Eli Lilly, Jansen, Kissei, Pfizer, Sanofi, Takeda, Tanabe-Mitsubishi, UCB, Yoshiya Tanaka Grant/research support from: Abbvie, Astellas, Bristol-Myers Squibb, Chugai, Daiichi-Sankyo, Eisai, Mitsubishi-Tanabe, MSD, Ono, Taisho-Toyama, Takeda, Speakers bureau: Abbvie, Asahi-kasei, Astellas, Bristol-Myers Squibb, Chugai, Daiichi-Sankyo, Eli Lilly, Eisai, Glaxo-Smithkline, Janssen, Mitsubishi-Tanabe, Novartis, Pfizer Japan Inc, Sanofi, Takeda, UCB, YL Biologics, Masayuki Inoo: None declared, Hitomi Kobayashi-Haraoka: None declared, Koichi Amano Grant/research support from: Asahi Kasei Pharma, Chugai Pharmaceutical Co. Ltd., Speakers bureau: AbbVie GK, Eli Lilly Japan K.K., Mitsubishi Tanabe Pharma, Pfizer Japan Inc., Masayuki Miyata: None declared, Yohko Murakawa Grant/research support from: Asahi Kasei Pharmaceutical Co., Ltd., Chugai Pharmaceutical Co., Ltd., Ono Pharmaceutical Co., Ltd., Daiichi Sankyo Co., Ltd., Teijin Pharma Ltd., Eisai Co., Ltd., Nippon Kayaku Co., Ltd., Mitsubishi Tanabe Pharma Corporation, Paid instructor for: Kissei Pharmaceutical Co., Ltd., Janssen Pharmaceutical K.K. Eisai Co., Ltd., Speakers bureau: Ono Pharmaceutical Co., Ltd., Mitsubishi Tanabe Pharma Corporation, Astellas Pharma Inc., UCB Japan Co. Ltd., Chugai Pharmaceutical Co., Ltd., AbbVie GK, Daiichi Sankyo Co., Ltd., AYUMI Pharmaceutical Corporation, Janssen Pharmaceutical K.K., Takeda Pharmaceutical Company Limited, Sanofi K.K. Teijin Pharma Ltd., Eli Lilly Japan K.K., Eisai Co., Ltd., Hidekata Yasuoka: None declared, Shintaro Hirata Grant/research support from: Eli Lilly, UCB, Consultant for: Bristol-Myers Squibb, Jansen, UCB, Paid instructor for: AbbVie, Eisai, Tanabe-Mitsubishi, Speakers bureau: AbbVie, Astellas, Ayumi, Bristol-Myers Squibb, Chugai, Eisai, Eli Lilly, Jansen, Kissei, Pfizer, Sanofi, Takeda, Tanabe-Mitsubishi, UCB, Hayato Nagasawa: None declared, Eiichi Tanaka Speakers bureau: Abbvie, Asahi Kasei pharma co., Bristol Myers Squibb, Chugai Pharmaceutical, Daiichi Sankyo Co., Eisai Pharmaceutical, Janssen Pharmaceutical K.K., Nippon Kayaku, Pfizer, Takeda Pharmaceutical, Taisho Toyama Pharmaceutical Co., and UCB Pharma., Nobuyuki Miyasaka: None declared, Hisashi Yamanaka Grant/research support from: AbbVie, Eisai, Bristol-Meyers, Novartis, Behringer, Astellas, Kaken, Nippon-Shinyaku, Pfizer, UCB, Ayumi, Ono, Daiichi-Sankyo, Taisyo-Toyama, Takeda, Tanabe-Mitsubishi, Chugai, Teijin Pharma, Torii, YLbio, Speakers bureau: Bristol-Meyers, Astellas, Pfizer, Daiichi-Sankyo, Takeda, Tanabe-Mitsubishi, Chugai, Teijin Pharma, YLbio, Kazuhiko Yamamoto Grant/research support from: Astellas, BMS, Daiichi-Sankyo, Mitsubishi Tanabe, Pfizer, Ayumi, Takeda, Chugai, Eisai, Taisho Toyama, UCB, Janssen, Eli Lilly, and NIPPON KAYAKU., Speakers bureau: Astellas, BMS, Daiichi-Sankyo, Mitsubishi Tanabe, Pfizer, Ayumi, Takeda, Chugai, Eisai, Taisho Toyama, UCB, Janssen, Eli Lilly, and NIPPON KAYAKU., Isao Yokota Speakers bureau: Chugai Pharma, Tatsuya Atsumi Grant/research support from: Astellas Pharma Inc., Takeda Pharmaceutical Co., Ltd., Mitsubishi Tanabe Pharma Co., Chugai Pharmaceutical Co., Ltd., Daiichi Sankyo Co. Ltd., Otsuka Pharmaceutical Co., Ltd. and Pfizer Inc., Alexion Inc., Bayer Yakuhin, Ltd./Otsuka Pharmaceutical Co., Ltd. Chugai Pharmaceutical Co., Ltd., Takeda Pharmaceutical Co., Ltd., Eisai Co., Ltd., Bristol-Myers Squibb Co., Daiichi Sankyo Co. Ltd., Mitsubishi Tanabe Pharma Co., Asahi Kasei Pharma Co., Consultant for: ONO PHARMACEUTICAL CO., LTD Sanofi K.K. Daiichi Sankyo Co., Ltd. Pfizer Inc., Speakers bureau: Mitsubishi Tanabe Pharma Co., Chugai Pharmaceutical Co., Ltd., Astellas Pharma Inc., Takeda Pharmaceutical Co., Ltd., Pfizer Inc., Daiichi Sankyo Co. Ltd., Bristol-Myers Squibb Co., Eli Lilly Japan K.K., Tsutomu Takeuchi Grant/research support from: Astellas Pharma Inc, Chugai Pharmaceutical Co., Ltd., Daiichi Sankyo Co., Ltd., Takeda Pharmaceutical Co., Ltd., AbbVie GK, Asahikasei Pharma Corp., Mitsubishi Tanabe Pharma Co., Pfizer Japan Inc., Eisai Co., Ltd., AYUMI Pharmaceutical Corporation, Nippon-kayaku Co. Ltd., Novartis Pharma K.K., Grant/research support from: AbbVie, Asahi Kasei, Astellas, AstraZeneca, AYUMI, Bristol-Myers Squibb, Chugai, Daiichi Sankyo, Eisai, Eli Lilly Japan, Janssen, Mitsubishi Tanabe, Nippon Kayaku, Novartis, Pfizer Japan Inc, Taiho, Taisho Toyama, Takeda, Teijin, Grant/research support from: Astellas Pharma Inc., Bristol Myers Squibb, Chugai Pharmaceutical Co., Ltd., Mitsubishi Tanabe Pharma Co., Pfizer Japan Inc., Santen Pharmaceutical Co., Ltd., Takeda Pharmaceutical Co., Ltd., Teijin Pharma Ltd., AbbVie GK, Asahi