QRS duration measured by 12-lead ECG in RA pts treated with TOFA (table 1). However, an increase in PQ interval duration was observed ($p=0.04$). There were significantly decrease of mean HR ($p<0.003$), increase of QRS duration ($p<0.03$), QTc ($p<0.03$), night QTc ($p<0.02$) in 24 h ECG ambulatory recording. HR, PQ, QTc duration were changed independently of beta-blockers therapy. The number of pts with QTc $\geq$ 440 ms increased from 11% to 21% ($p>0.05$). A change in QTc duration correlated negatively with dynamics of DAS 28, SDAI ($r=-0.4$, $p<0.05$), DM ($r=0.5$, $p<0.02$), dBP ($r=-0.4$, $p<0.04$). There were also significantly increase number of ventricular premature beats ($p<0.03$).

Table 1. ECG characteristics of pts with RA treated with TOFA

	Baseline	After 12 months
12-lead ECG		
Heart rate, bpm	71 [64;81]	69 [61;78]
PQ, ms	133 [126;131]	150 [130;160]*
QRS, ms	83 [79;89]	84 [80;91]
QTc, ms	421 [406;434]	410 [398;420]
24 h ECG		
Heart rate, bpm	78 [70;84]	74 [65;80]*
QRS, ms	82 [73;91]	85 [73;92]*
QTc, ms	409 [402;425]	415 [406;427]*
QTc night, ms	414 [400;434]	420 [408;437]*
VPB pts, n (%)	18 (66)	22 (78)
Ventricular premature beats, n	14 [7;50]	280 [15;3423]*

Data are presented in median values and IR (unless otherwise noted), * $p<0.05$ before and after TOFA treatment (nonparametric paired Wilcoxon test).

Conclusions: A significant decrease in HR and an increase in QRS, night QTc interval duration, number of ventricular premature beats by 24h ECG were observed in RA pts treated with tofacitinib (TOFA) during 12-month follow-up. QTc duration correlated with dynamic of disease activity, DM type 2 and diastolic BP.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.5119

THU0149 A CLINICAL AND PATHOLOGICAL CHARACTERIZATION OF METHOTREXATE-ASSOCIATED LYMPHOPROLIFERATIVE DISORDERS IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Methotrexate (MTX) is used as an anchor drug for the treatment of rheumatoid arthritis (RA). Patients with RA have a modestly increased risk of developing lymphoproliferative disorders (LPD). Furthermore, although sometimes spontaneous regression occurs after withdrawal of MTX, LPD developed during the treatment with MTX is broadly defined as MTX-associated LPD (MTX-LPD).

Objectives: To characterize the risk factors concerning MTX-LPD and to consider optimal treatment after occurrence of LPD in patients with RA.

Methods: We retrospectively evaluated 51 RA patients with LPD from 2006 to 2015 in our institution. MTX-LPD patients were divided into two groups; regressive LPD after MTX cessation (N=27) and persistent LPD though MTX was tapered (N=24), and the clinical characteristics, pathology and treatment outcomes were compared. EBV infection and IL-6 receptor (IL-6R) expression were analyzed by in situ hybridization and immunohistochemistry.

Results: There was no significant difference in disease duration, stage, disease activity of RA, the positive rate of Epstein-Barr virus-encoded small RNAs, EBERs (42.7 vs 50.0%) and treatment with TNF-inhibitors (40.7 vs 45.8%) between regressive LPD and persistent LPD. Age of LPD onset (59.1 vs 68.3), CRP (2 vs 5 mg/dl) and the weekly MTX dose (10.9 vs 8.4 mg/w) significantly differed between the groups. Of note, IL-6R was highly expressed in both group (75.0 vs 66.7%). Among regressive LPD, 3 patients developed DLBCL later. persistent LPD showed poorer prognosis and worse mortality than regressive LPD. An older age and anemia were poor prognostic factors. Of 51 patients, 41% achieved sustained low disease activity (LDA) with other DMARDs except MTX. Nine of 10 patients refractory to DMARDs were controlled by tocilizumab (TCZ) and kept LDA.

Conclusions: Taken together, it seems unreasonable to be lump the persistent-group into the same category as MTX-LPD. The high expression rate of IL-6R and the high responsiveness to TCZ suggest that IL-6/IL-6R is likely to play a role in the development of LPD in patients with RA.

Disclosure of Interest: K. Nakano: None declared, A. Nawata: None declared, S. Nakayama: None declared, S. Iwata: None declared, K. Hanami: None declared, S. Kubo: Speakers bureau: Bristol-Myers, I. Miyagawa: None declared, M. Yoshikawa: None declared, K. Saito: None declared, Y. Tanaka: Grant/research support from: Mitsubishi-Tanabe, Takeda, Daiichi-Sankyo, Chugai, Bristol-Myers, MSD, Astellas, Abbvie, Eisai, Consultant for: Abbvie, Chugai, Daiichi-Sankyo, Bristol-Myers, Mitsubishi-Tanabe, Astellas, Takeda, Pfizer, Teijin, Asahi-kasei, YL Biologics, Sanofi, Janssen, Eli Lilly, GlaxoSmithKline, Speakers bureau: Abbvie, Chugai, Daiichi-Sankyo, Bristol-Myers, Mitsubishi-Tanabe, Astellas, Takeda, Pfizer, Teijin, Asahi-kasei, YL Biologics, Sanofi, Janssen, Eli Lilly, GlaxoSmithKline

DOI: 10.1136/annrheumdis-2017-eular.4660

THU0150 OPTIMIZING COMORBIDITY RISK MANAGEMENT IN RA BY TRANSLATING A NURSE-LED INTERVIEW INTO AN EASILY INTERPRETABLE TRAFFIC LIGHT SYSTEM

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Background: Due to its inflammatory nature, rheumatoid arthritis (RA) is associated with a variety of comorbidities and individual risk factors [1]. The benefit of a nurse-led programme on RA comorbidity management has been reported recently [2].

Objectives: To describe a new assessment tool for patient risk management and report the difference between structured versus expert guided assessment following standard of care in a construct-validation cohort.

Methods: The ongoing cluster randomized multicentre study ERIKO is longitudinally assessing individual risk profiles of patients with RA in Germany. The aim of this study is to test the benefit of applying a nurse-led scoring algorithm for individual risk profiles followed by a structured patient consultation (active arm) as compared to local standard of care.

The ERIKO-Score was calculated by rating validated assessment tools and treatment guidelines and translating their outcome into a three-level ordinal score defined by the categories low, intermediate or high risk, including nominal weights for risk management (e.g. condition is being treated with goals achieved or not). Scores were interpreted numerically by rating categories with 0, 1 and 2 points, respectively.

We included cardiovascular (CV) risk (ESC-guideline), infection risk (RABBIT risk calculator), vaccination status (guideline), fracture risk (FRAX), tooth status (PSI), depression- (PHQ-9) and health-related quality of life (hrQoL, RAID). The same risk categorization was prompted in all centres at the screening visit without providing the rating tools.

This analysis compares SOC ratings from the screening visit (month zero) with the baseline ERIKO-scores at month three in the active arm. No statistical hypothesis testing was performed in this analysis.

Results: This analysis included 283 patients from 31 centres specialized in rheumatology care randomized to the active study arm. 82.3% were female with a mean age of 57.8 years (sd 12.1) and a mean DAS28 of 2.6 (sd 1.1). The mean total ERIKO-Score was slightly higher at baseline as compared to applying the scoring algorithm on SOC ratings at the screening visit (5.33 ± 1.95 vs. 4.32 ± 2.61, respectively, table 1). The discrepancy was mainly driven by CV risk, vaccination status, tooth status and depression risk, that were more often rated worse by applying the ERIKO score than by SOC, while infection- and fracture risk were more frequently rated lower by the ERIKO-Score (table 2). The strongest discrepancy between SOC ratings and ERIKO-Score ($\Delta = 2$ points) were observed for tooth status (N=54), CV risk (N=25) and vaccination status (N=25) (table 2). SOC ratings were strongly based on expert opinion with the most frequently cited tools being vaccination guidelines (38.9%), bone mineral density measurement (BMD) (39.6%) and RABBIT-infection risk-score (23.1%).

Table 1 ERIKO Score at baseline visit (3 months)

Dimension	Ordinal Risk Rating				Numeric interpretation	
	missing [% (N)]	Low [% (N)]	Intermediate [% (N)]	High [% (N)]	Median (IQR)	Mean (sd)
CV risk	9.2 (26)	27.9 (79)	26.5 (75)	36.4 (103)	1 (2)	1.1 (0.80)
Vaccination status	9.2 (26)	15.9 (45)	50.5 (143)	24.4 (69)	1 (1)	1.1 (0.66)
Infection risk	9.2 (26)	79.9 (226)	10.2 (29)	0.7 (2)	0 (0)	0.1 (0.36)
Risk of major osteoporotic fracture	9.9 (28)	52.7 (149)	32.9 (93)	4.6 (13)	0 (1)	0.5 (0.59)
Tooth status	11.3 (32)	5.3 (15)	55.1 (156)	28.3 (80)	1 (1)	1.3 (0.56)
Depression risk	9.2 (26)	46.3 (131)	39.6 (112)	4.9 (14)	0 (1)	0.5 (0.60)
hrQoL	9.2 (26)	33.9 (96)	47.3 (134)	9.5 (27)	1 (1)	0.7 (0.64)

^a n = 26 without data at baseline.

Table 2 Discrepancy between ERIKO-Score and ratings following SOC (baseline vs. screening)

Dimension	$\Delta = 1$ or 2 points (total)			$\Delta = 2$ points (low vs. high)	
	No difference [% (N)]	SOC risk lower [% (N)]	SOC risk higher [% (N)]	SOC risk lower [% (N)]	SOC risk higher [% (N)]
CV risk ^a	35.0 (99)	44.2 (125)	10.2 (29)	8.5 (24)	0.4 (1)
Vaccination status ^a	34.6 (98)	38.5 (109)	17.7 (50)	7.4 (21)	1.4 (4)
Infection risk ^a	63.6 (180)	6.0 (17)	21.2 (60)	0	3.2 (9)
Risk of major osteoporotic fracture ^a	36.8 (104)	15.2 (43)	38.9 (110)	1.4 (4)	3.5 (10)
Tooth status ^a	18.4 (52)	47.7 (135)	23.3 (66)	15.5 (44)	3.5 (10)
Depression risk ^a	48.4 (137)	30.7 (87)	11.7 (33)	3.2 (9)	3.2 (9)
hrQoL ^a	64.6 (166)	18.0 (51)	14.1 (40)	2.1 (6)	0.4 (1)

^a n = 30 without data at screening or baseline; ^b n = 26 without data at baseline

Conclusions: A nurse-led comorbidity risk assessment in rheumatology practices seems feasible. Applying the ERIKO-Score based on validated tools led to a

higher risk grading than the predominantly expert-opinion based SOC. Construct validation of the ERIKO-Score is ongoing.

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Acknowledgements: We are grateful to Dr. Imma Fischer (Tübingen) for statistical support.

Disclosure of Interest: K. Krüger Consultant for: AbbVie Deutschland GmbH & Co. KG, Speakers bureau: AbbVie Deutschland GmbH & Co. KG, R. Eder Consultant for: AbbVie Deutschland GmbH & Co. KG, C. Müller Shareholder of: AbbVie Inc., Employee of: AbbVie Deutschland GmbH & Co. KG, R. Hecker Shareholder of: AbbVie Inc., Employee of: AbbVie Deutschland GmbH & Co. KG
DOI: 10.1136/annrheumdis-2017-eular.3395

THU0151 ACPA ARE ASSOCIATED WITH LOW BONE MINERAL DENSITY IN RHEUMATOID ARTHRITIS

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Background: Several studies have related ACPA with the presence of bone erosion in rheumatoid arthritis patients as they induce the differentiation and activation of osteoclasts

Objectives: Our main aim is to evaluate the association of ACPA with bone mineral density (BMD) in RA

Methods: Case-control study of 73 RA patients (2010 EULAR criteria) and a long standing disease of 5 years. Demographic and clinical variables were collected. BMD values using densitometry at the lumbar (CL), hip (CT) and femoral neck (CF) were collected. The presence of low bone mineral density (osteopenia: tscore $\leq$ -1) and ACPA levels were compared using logistic regression analysis, adjusting variables related to BMD: age, sex, menopause, body mass index (BMI), habit Smoking, disease duration, daily corticoid doses, methotrexate treatment and inflammatory disease activity (DAS28)

Results: A group of 73 patients were included (14 men) with a mean age of 66.45 $\pm$ 10.41 years, mean body mass index 28.48 $\pm$ 5.22 kg/m², mean long standing disease of 2.28 $\pm$ 1.75 years and mean DAS 28 of 3.17 $\pm$ 1.18. A total of 29 patients were negative for ACPA compared to 44 patients that were positive for ACPA. Osteopenia in lumbar spine was found in 82.2% of patients 65.8% hip and 75.3% in femoral neck. Logistic regression was performed without finding statistically significant association between osteopenia and inflammatory activity (DAS 28), vitamin D levels and positive rheumatoid factor, adjusted for variables that can modify BMD. ACPA Positive (any titer) were associated with the presence of lumbar spine osteopenia (OR 7.19, 95% CI 1.77–29.17) (p=0.006), hip (OR 15.17, 95% CI 3.96–58.18) (p=0.001) and femoral neck (OR 3.76; 95% CI 1.20–11.82) (p=0.023). In addition, a simple variance analysis (ANOVA) was performed to compare T scores and ACPA levels divided into three categories: $\leq$ 25U/mL, 25–300U/mL and $>$ 300U/mL. ACPA group $\leq$ 25U/mL differed in mean T score values in lumbar spine, hip and femoral neck. No differences were found between ACPA positive patients with low and high levels for T score values.

Conclusions: ACPA positivity in RA is associated with an increased risk of osteopenia in lumbar spine, hip and femoral neck independently of other variables that may modify bone mineral density. These data suggest that ACPA may play a role in bone remodeling

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.4422

THU0152 WHO ARE THE PATIENTS WITH RHEUMATOID ARTHRITIS (RA) WHO ARE GETTING COMORBIDITY SCREENING PROCEDURES IN ACCORDANCE WITH GUIDELINES? A STUDY OF 769 ESTABLISHED RA PATIENTS

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Background: Patients with RA are either more at risk of, or less well screened for, several comorbidities including cardiovascular (CV) risk, cancer, infections and osteoporosis.[1] Recommendations have been developed on how and at what frequency to screen for comorbidities in RA patients.[2]

Objectives: To characterise patients who are being screened correctly (i.e., in accordance with recommendations).

Methods: *Study design:* This was an open long-term (3 years) extension of the COMEDRA 6 month randomized controlled trial in which patients with definite, stable RA were visiting a nurse for comorbidity assessment and screening counselling.[3] For this analysis, only the final visit data were used cross-

sectionally. *Assessment of comorbidity screening:* A score was developed to quantify comorbidity screening procedures in accordance with guidelines:[4] this score gives 50 points to CV risk screening, 20 points to cancer screening, 20 points to pneumococcus and influenza vaccination and 10 points to osteoporosis screening. The score ranges 0–100 and 0 indicates optimal screening. *Factors associated with optimal screening:* demographic and disease characteristics were compared between patients considered well-screened (lowest tertile for screening score) versus other patients. *Statistical analysis:* Variables with p<0.20 in univariate analysis were entered into the multivariate analysis using a backward stepwise logistic regression.

Results: 769 patients were assessed: mean ($\pm$ SD) age 62 ($\pm$ 11) years, mean disease duration 17 ($\pm$ 10) years; 614 (80%) were women and 535 (70%) were receiving a biologic. Disease was well-controlled (mean DAS28 2.8 $\pm$ 1.3). The mean comorbidity screening score was 24.3 ($\pm$ 17.8) (range, 0–100). The 316 patients (41% of all patients) in the lowest tertile for this score (i.e., with a score $\leq$ 15) were less often smokers: odds ratio [95% confidence interval] 0.45 [0.28 – 0.72], were more often treated for hyperlipidemia (2.58 [1.85 – 3.61]), and were more often treated with a biologic (1.97 [1.4 – 2.76]).

Conclusions: Comorbidity screening is suboptimal in RA. Patients who were better screened were more frequently already followed-up for hyperlipidemia and were more frequently receiving biologics but more less frequently smokers. Thus it seems getting optimal screening may reflect both patient characteristics but also physician attention to comorbidity in certain situations. Empowering patients to be responsible for the comorbidity screening reminders should be explored.

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Acknowledgements: grant from Roche France and from the French National Research Program (PHRC AOM 12072).

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.2991

THU0153 VASCULAR MORBIMORTALITY IN RHEUMATOID ARTHRITIS (RA) PATIENTS AND ITS RELATION WITH VASCULAR STUDY

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Background: RA patients have a higher risk of vascular events, especially cardiac ones. Besides, mortality in these patients is 54% higher than the general population. Nowadays, we have non-invasive techniques that allow us to detect subclinical vascular damage.

Objectives: To describe subclinical vascular affection in a sample of RA patients and to explore its relationship with mortality and with the development of vascular events.

Methods: Ambispective observational study with analytical components. We included, consecutively, RA patients controlled in a tertiary hospital. We gathered demographic (sex, age, body mass index [BMI]), clinical (traditional vascular risk factors, previous vascular events), and analytical variables (atherogenic index, glomerular filtration [GF] [MDRD], CRP, ESR). Other variables were collected retrospectively from the electronic medical record. We estimated the modified SCORE. We explored the extracranial branches of the carotid artery with an Esaote MyLab70XVG ultrasound device with a linear probe (7–12mHz) and an automated program measuring intima media thickness (IMT) by radiofrequency ("Quality intima media thickness in real-time, QIMT"), and the presence of atheroma plaques, as per the Mannheim consensus, was registered. We also determined pulse wave velocity (PWV) by a validated MobilOGraph® device. We considered an IMT $>$ 900 μ m and a PWV $\geq$ 10m/s as pathologic values. We prospectively collected mortality and the development of new vascular events over three years. Statistical analysis was performed using SPSS 17.0 software.

Results: We included 198 patients, excluding 13 because of previous vascular events. The mean age was 65.8 years (DE 13.3) and most of them were women (76.2%). The mean BMI was 27.29 (DE 4.84). 27% were smokers, 42.7% hypertensive, 46.7% dyslipemic and 10.8% were diabetic. The mean duration of RA was 17.37 years. 74.6% of patients were seropositive (RF and/or ACPA) and 75.5% had erosions. 74.6% received glucocorticoids, 58.4% NSAIDs, 98.9% DMARDs and 35.7% biologic therapies. The mean CRP and ESR were 9.45mg/L (DE: 32.2) and 14.04mm/h (DE:14.46), respectively. The mean modified SCORE was 1.81 (DE: 1.79).

Regarding the vascular study, 48.6% of the patients had atheroma plaques, 31.7% had a pathologic PWV with a mean value of 9.13 (DE 2.12), and 16.7% had a pathologic IMT with a mean value of 754 μ m (DE 168.52).

During 3 years of follow up, we registered 26 (14.1%) vascular events: 9.7% cardiac, 2.1% cerebral and 2.2% peripheral. There were 5 deaths: 3 vascular, 1 infectious and 1 respiratory. The development of vascular events was related with the presence of atheroma plaques (p 0.008) and with pathologic PWV (p