Table 2. The four comorbidity indexes discrimination for 1- and 5-year survival in patients with RA.

Models	1-year mortality		5-year mortality	
	Harrell's c-statistics	AIC	Harrell's c-statistics	AIC
Base model	0.744	1868	0.777	10281
Base model+ CCI	0.796	1783	0.802	9879
Base model+ ECI	0.772	1829	0.793	10024
Base model+ MMI	0.779	1821	0.792	10038
Base model+ RDCI	0.773	1817	0.791	10048

Base model included age, gender, income quartiles, urbanization and occupation groups. The Harrell's c-statistic indicates model prediction as the followings: 0.5 (as well as chance), 0.7–0.8 (acceptable), 0.8–0.9 (excellent), and 0.9–1 (outstanding prediction). The AIC statistic was calculated, and a small AIC indicates better prediction of the model.

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AB0260 TREATMENT WITH BIOTECHNOLOGICAL DRUGS ACCORDING TO PRE-DEFINED SELECTION CRITERIA IN PATIENTS WITH RHEUMATOID ARTHRITIS: PRELIMINARY RESULTS OF A SINGLE COHORT

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Background: Current recommendations on the treatment of Rheumatoid Arthritis (RA) are based on a treat to target approach, nevertheless which biologic drug should be used in an unresponsive patient is not clarified (1). Such a strategy is essentially justified by the fact that no biotechnological drug has proved to be superior to any other (2).

Recent studies have reported some disease or patient features that are associated with a greater or lesser likelihood of response (3). Nevertheless, an adapted therapy to the single patient and based on physiopathological mechanisms has not been acquired yet.

Objectives: Aim of this study was to evaluate if the choice of a tailored therapy, based on patient and disease features, would be an effective strategy.

Methods: From April 1st 2017, at our Department of Rheumatology of the University of Campania, each patient with RA has been characterized, at enrolment, for demographic and disease features, and started a biological Disease-modifying antirheumatic drug based on an established algorithm (**Figure 1**). Attainment of the targeted end point i.e. remission (R) as assessed by Simplified Disease Activity Index (SDAI) <3.3 or at least low disease activity (LDA), SDAI<11, has been evaluated at 3, 6 and 12 months.

Figure 1: Biologic algorithm
 TNF, Tumor necrosis factor; BMI, Body Mass Index;
 RF, Rheumatoid Factor; ACPA, Anti-Citrullinated cyclic Peptides Antibodies

Figure 1

Results: Forty-nine patients were admitted to our centre from April 1st2017 to December 31st2018. Out of them, 36 patients have been followed up at least for 3 months and were included in the study (algorithm+ patients). Out of them, 26 (72.2%) reached 6 months of treatment, while 16 (44.4%) 12 months of treatment. Among the 26 patients evaluated at 6 months, 23(88.5%) achieved the targeted end point. At 12 months, 16/16 patients (100%) preserved a status of remission or at least low disease activity. We compared our results to those registered, from January 2015 to September 2016, in a RA cohort of 79 patients (RA general cohort). We found a significant difference in regard to attainment of the target at 6 months (23/26 patients, 88.5% algorithm+ vs 45/67 patients, 67.2% RA general cohort; p=0.04) and at 12 months (16/16

patients, 100% algorithm+ vs 40/57 patients, 70.2% RA general cohort; p=0.01) (**Table 1**). Notably, 32 out of the 79 patients had undergone a biological drug which didn't follow the predefined algorithm. These patients (algorithm- patients) presented a further lower incidence of response with regard to those enrolled according to the algorithm: 22/32 patients (68.7%) at 3 months; p=0.4; 17/29 (58.6%) at 6 months; p=0.001; 17/24 (70.8%) at 12 months; p=0.03).

Conclusion: The choice of a personalized approach toward treatment of RA might be an effective strategy to achieve the targeted end point of remission or at least low disease activity in every patient.

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Table 1. Comparison of percentage of response between Algorithm + patients (n.36) and RA general cohort (n.79)

	Algorithm+ patients	RA general cohort	p
LDA/R 3 months	28/36 (77.7%)	51/76 (67.1%)	0.25
LDA/R 6 months	23/26 (88.5%)	45/67 (67.2%)	0.04
LDA/R 12 months	16/16 (100%)	40/57 (70.2%)	0.01

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AB0261 TARGET SETTING OF FUNCTIONAL REMISSION FOR HAND AND WRIST SURGERIES USING GRIP POWER AND PATIENT-REPORTED OUTCOME MEASURES IN PATIENTS WITH RHEUMATOID ARTHRITIS: A PROSPECTIVE COHORT STUDY

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Background: The treatment aim of rheumatoid arthritis (RA) is achieving and maintaining functional remission via tight medical control. However, if adequate medication is not administered in the very early stage of the disease, surgical reconstruction for the structurally damaged hand and wrist is sometimes required.

Objectives: To evaluate the effect of surgical treatment of the hand and wrist⁽¹⁾ and to set the target of functional remission using grip power and patient-reported outcome measures (PROs) at baseline.

Methods: A prospective observational cohort study was performed in RA patients who were scheduled to have primary hand and/or wrist surgeries. Assessments were performed at baseline and 12 months after surgery using grip power (GP), pain visual analogue scale (pain VAS), general health (GH), disease activity score 28- C-reactive protein(4) (DAS28-CRP (4)), disabilities of the arm, shoulder and hand (DASH), European quality of life scale with five dimensions (EQ-5D), Beck depression inventory -II (BDI-II) and health assessment questionnaire- disability index (HAQ-DI) for all registered patients. Baseline data for each item in the group with HAQ remission (HAQ-DI≤0.5) at 12 months (REM) were compared with those in the group without remission at 12 months (non-REM).

Results: There were 137 sites (63 hands, 74 wrists) in 119 patients whose average age was 62 (19-88) years and average disease duration was 14 (1-45) years. Overall, the physical function (GP, pain VAS, DASH, HAQ-DI), quality of life (HAQ-DI, GH, EQ-5D), depression (BDI-II) and disease activity (DAS28-CRP(4)) had significantly improved at 12 months (p<0.01) (**Table 1**). In the REM group (n=47), the GP and EQ-5D were significantly higher (p<0.01) and the HAQ-DI, DASH and BDI-II significantly lower (p<0.01) than in the non-REM group (**Table 2**). The cut-off value at baseline for achieving HAQ remission at 12 months after surgery was 119 mmHg (sensitivity: 0.70, specificity: 0.64) in GP, 0.81 (0.81, 0.77) in HAQ-DI, 36.9 (0.74, 0.73) in DASH, 0.69 (0.87, 0.74) in EQ-5D and 9.5 (0.72, 0.60) in BDI-II.

Abstract Table 1. Changes in the GP and each PRO (n=119)

item	Baseline	12 months after op.	P
GP (mmHg)	125.6	139.2	0.009
Pain VAS (mm)	32.3	20.1	1E-07
GH (mm)	35.2	24.1	4.6E-07
DAS28-CRP(4)	3.1	2.2	3.1E-15
DASH	42.1	35.1	6E-05
EQ-5D	0.72	0.76	0.0005
BDI-II	13.4	11.9	0.008
HAQ-DI	1.07	0.91	0.0021

Abstract Table 2. Baseline value in the REM group (n=47) and the non-REM group (n=72)

item	REM	Non-REM	P
GP (mmHg)	151	109	8.35E-05
DASH	26.1	52.2	1.54E-11
EQ-5D	0.80	0.66	3.51E-09
BDI-II	10.1	15.5	0.0011
HAQ-DI	0.5	1.4	7.19E-14

Conclusion: GP and other four PROs were validated as good objective tools for assessing the physical function after hand and wrist surgeries. It would be helpful for rheumatologists to consider the timing of surgery in RA patients based on the cut-offs determined in this study⁽²⁾.

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In the other items, there was not a significant difference between two groups
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AB0262

SERUM CALPROTECTIN AS A MARKER OF DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS, AXIAL SPONDYLOARTHRITIS AND PSORIATIC ARTHRITIS

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Background: Calprotectin is a heterodimeric complex of S100A8 and S100A9 calcium-binding proteins. Stored in the cytosol of granulocytes, it is released under cell stress and acts as an endogenous damage-associated pattern molecule. In contrast to C-reactive protein (CRP), it is not an acute phase protein. Serum calprotectin levels correlate with disease activity of several inflammatory rheumatic diseases.

Objectives: To investigate association of serum calprotectin with clinical activity in rheumatoid arthritis (RA), axial spondyloarthritis (axSpA) and psoriatic arthritis (PsA).

Methods: We performed retrospective analysis of patients with RA, axSpA and PsA from the Swiss Clinical Quality Management (SCQM) registry. Age- and sex-matched asymptomatic first-degree relatives of RA patient without sign of autoimmunity were used as healthy controls (HC, n=72). Serum calprotectin was measured by ELISA (Inova Diagnostics, research use only). Calprotectin levels were categorized into quartiles for each disease. Clinical outcomes included swollen joint count (SJC), CDAI, HAQ and ultrasound power Doppler (USPD) score for RA patients; BASDAI, BASFI and ASDAS for axSpA; SJC and DAPSA for PsA. Comparison of outcomes by calprotectin quartile levels was performed using Kruskal-Wallis tests for continuous

outcomes or trend tests for categorical. We used multivariable regression models to compare association of CRP and calprotectin with USPD. Proportions of explained variances were estimated using R².

Figure: Serum calprotectin level by diagnosis

Results: 1729 subjects [RA=969, axSpA=451, PsA=237 and HC=72] were included. 209 RA patients had an ultrasound performed at time of blood collection. Median levels of serum calprotectin were higher in each disease compared to HC ($p<0.01$; Figure). In RA, all clinical scores were statistically different across quartiles indicating an association between calprotectin levels and higher disease activity (SJC, CDAI) and severity (HAQ) (Table). In univariable regression models, both CRP ($R^2=0.02$, $p=0.04$) and calprotectin ($R^2=0.10$, $p<0.001$) were associated with USPD scores. Multivariable model analysis revealed that calprotectin alone was as predictive of USPD scores as calprotectin and CRP together (likelihood ratio test between models $p=0.14$). In axSpA, an association between level of calprotectin and ASDAS score ($p<0.01$) was observed. For PsA, SJC, DAPSA and CRP did not differ across calprotectin quartiles.

Table: Clinical outcomes by calprotectin quartile levels. * Results are mean (SD) except for those with an asterisk which represent median (IQR):

Calprotectin quartiles [µg/ml]	1	2	3	4	p
RA quartiles (n)	[0-1.7] (243)	[1.7-2.6] (242)	[2.6-4.3] (242)	[4.3-13] (242)	
SJC	1.3 (2.5)	1.7 (2.8)	2.2 (3.3)	3.4 (4.5)	<0.001
HAQ	0.6 (0.6)	0.8 (0.7)	0.8 (0.7)	1.0 (0.7)	<0.001
CDAI	7.3 (7.9)	9.8 (9.9)	11.2 (11.7)	12.3 (13.4)	0.002
USPD	2.2 (5.9)	2.0 (4.0)	2.0 (3.0)	4.7 (6.1)	0.01
CRP mg/l*	2.0 [1.0,4.6]	2.0 [1.0,7.0]	2.2 [1.0,7.0]	4.2 [2.0,12.0]	<0.001
axSpA quartiles (n)	[0-1.6] (113)	[1.6-2.4] (113)	[2.4-3.9] (113)	[3.9-13] (113)	
BASDAI	3.6 (2.3)	4.0 (2.4)	3.5 (2.4)	4.1 (2.3)	0.2
BASFI	2.1 (2.3)	2.7 (2.6)	2.3 (2.3)	2.8 (2.5)	0.2
ASDAS	2.1 (0.9)	2.4 (1.0)	2.2 (1.1)	2.7 (1.0)	0.01
CRP mg/l*	3.0 [1.0,8.0]	2.0 [1.0,8.0]	3.0 [1.0,8.0]	4.0 [2.0,13.0]	0.002
PsA quartiles (n)	[0-1.4] (60)	[1.4-2.2] (59)	[2.2-3.4] (59)	[3.4-12] (59)	
SJC	1.8 (4.5)	1.3 (2.5)	1.1 (2.5)	2.2 (4.4)	0.3
DAPSA	18.2 (23.5)	15.6 (17.5)	18.4 (16.8)	21.1 (24.2)	0.8
CRP mg/l *	2.2 [1.0,8.0]	2.0 [1.0,5.5]	4.0 [1.9,7.0]	3.9 [1.8,7.8]	0.2

Conclusion: This large study supports the association of serum calprotectin levels with disease activity and severity in RA and shows an association between serum calprotectin and ASDAS in axSpA.

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