Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Impact of the COVID-19 pandemic on therapeutic management of rheumatoid arthritis in Brittany (France)

Early during the SARS-CoV-2 sanitary crisis, the vulnerability of patients treated with immunomodulatory agents or non-steroidal anti-inflammatory drugs (NSAIDS) with regards to the most severe forms of the disease have been suggested [1,2]. Despite rapid clarifications from health authorities and expert societies regarding the indication to continue ongoing therapy in most situations, the usual immunosuppressive treatment of several clinical conditions, including inflammatory rheumatic diseases, may have been impacted by these scientific data and their media relay [3–6]. In the present work, our objectives were to evaluate the impact of COVID-19 pandemic on therapeutic management of rheumatoid arthritis (RA) and to identify factors associated with patient's choice to reduce or stop Disease-modifying anti-rheumatic drugs regimen (DMARD).

For this, we conducted a cross-sectional single-center study in Brittany (France) between April 23, 2020 and July 28, 2020. The study received approval from the Brest University Hospital Ethics committee (29BRC20.0110). A questionnaire was administered to patients with a diagnosis of RA satisfying ACR/EULAR criteria, receiving DMARD or having a prescription to initiate such treatment, during face-to-face or remote consultations. The

Table 1
Characteristics of overall population and results of logistic regression analyses comparing participants according to the personal decision to modify DMARD treatment in relation to the context of sanitary crisis.

	Overall participants ($n = 252$)	Personal decision to reduce or stop DMARD treatment ($n = 24$)	No personal decision to reduce or stop DMARD treatment ($n = 225$)	Univariate analysis odds ratios	Multivariate analysis odds ratios
General characteristics					
Age (years)	61.3 (12.7)	53.8 (13.3)	62.2 (12.5)	0.95 (0.92 to 0.98)***	
Age categories					
18 to 44 years	32 (12.7%)	6 (25.0%)	26 (11.6%)	1 (referent)	1 (referent)
45 to 64 years	110 (43.9%)	15 (62.5%)	93 (41.5%)	0.70 (0.25 to 1.98)	0.77 (0.27 to 2.22)
65 years and older	109 (43.4%)	3 (12.5%)	105 (46.9%)	0.12 (0.03 to 0.52)***	0.15 (0.03 to 0.64)**
Female	191 (75.8%)	20 (83.3%)	169 (75.1%)	1.66 (0.54 to 5.05)	
BMI (kg/m^2)	25.3 (5.0)	25.2 (4.8)	25.3 (5.1)	1.00 (0.91 to 1.10)	
Urban residency	80 (32.7%)	10 (43.5%)	69 (31.5%)	1.67 (0.70 to 4.00)	
Active smoking	51 (20.2%)	4 (16.7%)	47 (20.9%)	0.76 (0.25 to 2.32)	
Medical history					
High blood pressure	69 (27.5%)	3 (12.5%)	66 (29.5%)	0.34 (0.10 to 1.19)*	0.44 (0.12 to 1.58)
Diabetes	11 (4.4%)	0 (0.0%)	11 (4.9%)	*Not applicable*	
MACE	32 (12.7%)	2 (8.3%)	30 (13.3%)	0.59 (0.13 to 2.64)	
Chronic lung disease	68 (28.1%)	5 (21.7%)	63 (29.0%)	0.68 (0.24 to 1.91)	
Severe infection	47 (18.8%)	4 (16.7%)	42 (18.7%)	0.87 (0.28 to 2.67)	
Malignancy	28 (11.2%)	1 (4.2%)	27 (12.1%)	0.32 (0.04 to 2.44)	
RA characteristics					
Disease duration (years)	14.9 (10.8)	13.2 (10.8)	15.1 (10.8)	0.98 (0.94 to 1.02)	
RF positivity	194 (79.5%)	18 (75.0%)	175 (80.3%)	0.74 (0.28 to 1.97)	
ACPA positivity	200 (83.0%)	18 (75.0%)	181 (84.2%)	0.56 (0.21 to 1.52)	
Erosive disease	162 (66.4%)	16 (66.7%)	145 (65.9%)	1.38 (0.52 to 3.67)	
Past glucocorticoid exposure (≥ 5 mg per day for more than 3 months)	151 (62.9%)	14 (58.3%)	135 (63.1%)	0.82 (0.35 to 1.93)	
RA treatments					
Methotrexate	164 (65.6%)	15 (62.5%)	149 (66.2%)	0.85 (0.36 to 2.03)	
Hydroxychloroquine	8 (3.2%)	1 (4.2%)	7 (3.1%)	1.35 (0.16 to 11.4)	
Other synthetic DMARD	23 (9.2%)	3 (12.5%)	20 (8.9%)	1.46 (0.40 to 5.31)	
Biological DMARD	140 (56.0%)	13 (54.2%)	126 (56.0%)	0.93 (0.40 to 2.16)	
Targeted synthetic DMARD	10 (4.0%)	1 (4.2%)	9 (4.0%)	1.04 (0.03 to 8.57)	
Glucocorticoids	62 (24.8%)	8 (33.3%)	53 (23.6%)	1.62 (0.66 to 4.00)	
NSAIDs	45 (18.1%)	5 (20.8%)	40 (17.9%)	1.20 (0.42 to 3.42)	

Reported values are mean (standard deviation) for continuous variables, numbers (percentage) for dichotomous variables. ACPA: anti–citrullinated protein antibody; BMI: body mass index; CI: confidence interval; DMARD: disease modifying anti-rheumatic drug; MACE: major adverse cardiac events; NSAID: non-steroidal anti-inflammatory drug; PGA: patient global assessment; RF: rheumatoid factor. * P-value < 0.20 (P-values < 0.20 in univariate analysis were included in the multivariate model); ** P-value < 0.05; *** P-value < 0.001.

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primary outcome was DMARD treatment modification in relation to the pandemic. Logistic regression was performed in order to identify factors associated with patient's decision to modify DMARD treatment. The explanatory variables included in the multivariate regression model were those showing P-value < 0.20 in univariate analysis. Significance was defined as $P < 0.05$ for variables in the final model. Data analyses were performed using Statistical package for the social sciences version 23.0 (IBM, Armonk, NY, USA).

Two hundred and fifty two patients participated in this survey, of which 75.8% (191/252) were women. Detailed characteristics of participants, including those related to medical background, RA characteristics and ongoing immunomodulatory therapy at last visit are provided in Table 1.

Of the patients, 2.8% (7/252) reported a history of SARS-CoV-2 infection at the time of the survey. Among them, only one case was further confirmed with RT-PCR. Overall, 11.2% of patients (28/249) reported that their DMARD treatment have been transiently reduced or stopped in relation to the context of sanitary crisis. Modification of the DMARD treatment was the result of a patient's choice in 85.7% of cases (24/28). Within the same period, DMARD treatment was reduced or stopped for other reasons in 7.6% (19/249) of participants. Logistic regression analyses showed that patient's decision to modify DMARD treatment was less frequent among participants aged 65 years or over (Table 1).

This study shows that in a French area of low viral circulation, the sanitary crisis led to DMARD treatment modification in around 10% of RA patients, a result of the same order as what has been observed elsewhere in comparable contexts [7–10]. Our results describe the therapeutic modifications that can be highlighted during a classic interview with patients but do not take into account the more complex problematic of non-compliance. In most cases, treatment modification was the consequence of a patient's decision rather than a decision driven by a healthcare professional. Future studies will have to determine the longitudinal impact of COVID-19 pandemic on RA optimal management.

Disclosure of interest

The authors declare that they have no competing interest.

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