**Editor**

Josef S Smolen

Associate Editors

Francis Berenbaum
Dimitrios Boumpas
Gerd Burmester
Mary Crow
Kimme Hyrich
Rik Lories
Iain McInnes
Thomas Pap
David Pisetsky
Désirée van der Heijde
Kazuhiko Yamamoto

Editorial office

Annals of the Rheumatic Diseases
BMJ Publishing Group Ltd
BMA House
Tavistock Square
London WC1H 9JR, UK
T: +44 (0)20 3655 5889
E: ard@bmj.com
Twitter: @ARD_BMJ
ISSN: 0003-4967 (print)
ISSN: 1468-2060 (online)

Disclaimer: The Editor of *ARD* has been granted editorial freedom and *ARD* is published in accordance with editorial guidelines issued by the World Association of Medical Editors and the Committee on Publication Ethics. *ARD* is primarily intended for healthcare professionals and its content is for information only. The Journal is published without any guarantee as to its accuracy or completeness and any representations or warranties are expressly excluded to the fullest extent permitted by law. Readers are advised to independently verify any information on which they choose to rely. Acceptance of advertising by *ARD* does not imply endorsement. Neither *EULAR* nor BMJ Publishing Group Limited shall have any liability for any loss, injury or damage howsoever arising from *ARD* (except for liability which cannot be legally excluded).

Copyright: © 2021 BMJ Publishing Group Ltd and European League Against Rheumatism. All rights reserved; no part of this publication may be reproduced in any form without permission.

ARD is published by BMJ Publishing Group Ltd typeset by Exeter Premedia Services Private Ltd, Chennai, India and printed in the UK on acid-free paper.

Annals of the Rheumatic Diseases, ISSN 0003-4967 (USPS 2152) is published monthly by BMJ Publishing Group Ltd, BMA House, Tavistock Square, WC1H 9JR London. Airfreight and mailing in the USA by agent named World Container Inc, 150-15, 183rd Street, Jamaica, NY 11413, USA. Periodicals postage paid at Brooklyn, NY 11256. US Postmaster: Send address changes to *Annals of the Rheumatic Diseases*, World Container Inc, 150-15, 183rd Street, Jamaica, NY 11413, USA. Subscription records are maintained at BMA House, Tavistock Square, WC1H 9JR London. Air Business Ltd is acting as our mailing agent.

Editorial

- 137** Glucocorticoids: surprising new findings on their mechanisms of actions
F Buttgerieit

Heroes and pillars of rheumatology

- 140** Johann Lucas Schoenlein (1793–1864): impact without publications
B Manger, G Schett, G R Burmester

Review

- 143** Mechanisms of progressive fibrosis in connective tissue disease (CTD)-associated interstitial lung diseases (ILDs)
P Spagnolo, O Distler, C J Ryerson, A Tzouveleakis, J S Lee, F Bonella, D Bouros, A-M Hoffmann-Vold, B Crestani, E L Matteson

Viewpoint

- 151** Tackling osteoarthritis during COVID-19 pandemic
F A Castro da Rocha, L d P Melo, F Berenbaum

Rheumatoid arthritis

- 154** Factors associated with progression to inflammatory arthritis in first-degree relatives of individuals with RA following autoantibody positive screening in a non-clinical setting
E A Bemis, M K Demouelle, J A Seifert, K J Polinski, M H Weisman, J H Buckner, P K Gregersen, T R Mikuls, J R O'Dell, R M Keating, K D Deane, V M Holers, J M Norris
- 162** Dysbiosis in the oral microbiomes of anti-CCP positive individuals at risk of developing rheumatoid arthritis
Z Cheng, T Do, K Mankia, J Meade, L Hunt, V Clerehugh, A Speirs, A Tugnait, P Emery, D Devine

- 169** Risk of venous thromboembolism in rheumatoid arthritis, and its association with disease activity: a nationwide cohort study from Sweden
V Molander, H Bower, T Frisell, J Asklung

- 176** In vitro elimination of autoreactive B cells from rheumatoid arthritis patients by universal chimeric antigen receptor T cells
B Zhang, Y Wang, Y Yuan, J Sun, L Liu, D Huang, J Hu, M Wang, S Li, W Song, H Chen, D Zhou, X Zhang

Psoriatic arthritis

- 185** Brodalumab in psoriatic arthritis: results from the randomised phase III AMVISION-1 and AMVISION-2 trials
P J Mease, P S Helliwell, K F Hjuler, K Raymond, I McInnes

Paediatric rheumatology

- 194** Natural killer cells and type II interferon in Ro/SSA and La/SSB autoantibody-exposed newborns at risk of congenital heart block
M Ivanchenko, G E Thorlacius, M Hedlund, V Ottosson, L Meneghel, S Björkander, A Ossoinak, J Tingström, K Bremme, E Sverremark-Ekström, K Gemzell-Danielsson, S-E Sonesson, K Chemin, M Wahren-Herlenius

Systemic lupus erythematosus

- 203** Transcutaneous auricular vagus nerve stimulation reduces pain and fatigue in patients with systemic lupus erythematosus: a randomised, double-blind, sham-controlled pilot trial
C Aranow, Y Atish-Fregoso, M Lesser, M Mackay, E Anderson, S Chavan, T P Zanos, T Datta-Chaudhuri, C Bouton, K J Tracey, B Diamond

MORE CONTENTS ►

Member since 2008

JM00004

This journal is a member of and subscribes to the principles of the

Committee on Publication Ethics

<http://publicationethics.org/>

When you have finished with this please recycle it

This article has been chosen by the Editor to be of special interest or importance and is freely available online.

This article has been made freely available online under the BMJ Journals open access scheme. See <http://authors.bmj.com/open-access/>

- 209** Proteomic, biomechanical and functional analyses define neutrophil heterogeneity in systemic lupus erythematosus
K R Bashant, A M Aponte, D Randazzo, P Rezvan Sangsari, AJT Wood, J A Bibby, E E West, A Vassallo, Z G Manna, M P Playford, N Jordan, S Hasni, M Gucek, C Kemper, A Conway Morris, N Y Morgan, N Toepfner, J Gucek, N N Mehta, E R Chilvers, C Summers, M J Kaplan

Systemic sclerosis

- 219** Progressive interstitial lung disease in patients with systemic sclerosis-associated interstitial lung disease in the EUSTAR database
 *A-M Hoffmann-Vold, Y Allamore, M Alves, C Brunborg, P Airó, L P Ananieva, L Czirájk, S Guiducci, E Hachulla, M Li, C Mihai, G Riemekasten, P P Sfikakis, O Kowal-Bielecka, A Riccardi, O Distler, on behalf of EUSTAR collaborators*


- 228** Machine learning integration of scleroderma histology and gene expression identifies fibroblast polarisation as a hallmark of clinical severity and improvement
K Showalter, R Spiera, C Magro, P Agius, V Martyanov, J M Franks, R Sharma, H Geiger, T A Wood, Y Zhang, C R Hale, J Finik, M L Whitfield, D E Orange, J K Gordon

Epidemiology

- 238** Impact of the COVID-19 pandemic on the disease course of patients with inflammatory rheumatic diseases: results from the Swiss Clinical Quality Management cohort
A Ciurea, E Papagiannoulis, K Bürki, I von Loga, R Micheroli, B Möller, A Rubbert-Roth, M Andor, R Bräm, A Müller, D Dan, D Kyburz, O Distler, A Scherer, A Finckh

- 242** Towards consensus in defining and handling contextual factors within rheumatology trials: an initial qualitative study from an OMERACT working group
S M Nielsen, M Uggem Rasmussen, M Boers, D A van der Windt, M de Wit, T G Woodworth, C A Flurey, D Beaton, B Shea, R Escorpizo, D E Furst, J S Smolen, K Toupin-April, A Boonen, M Voshaar, T Ellingsen, G A Wells, B C Reeves, L March, P Tugwell, R Christensen

Therapy

- 250** Local steroid activation is a critical mediator of the anti-inflammatory actions of therapeutic glucocorticoids
 *C Fenton, C Martin, R Jones, A Croft, J Campos, A J Naylor, A E Taylor, M Chimen, M Cooper, G G Lavery, K Raza, R S Hardy*

Imaging

- 261** Criterion validity of ultrasound in the identification of calcium pyrophosphate crystal deposits at the knee: an OMERACT ultrasound study
G Filippou, A Scanu, A Adinolfi, C Toscano, D Gambera, R Largo, E Naredo, E Calvo, G Herrero-Beaumont, P Zufferey, C M Bonjour, D K MacCarter, S Makman, Z Weber, F Figus, I Möller, M Gutierrez, C Pineda, D Clavijo Cornejo, H Garcia, V Ilizaliturri, J Mendoza Torres, R Pichardo, L C Rodriguez Delgado, E Filippucci, E Cipolletta, T Serban, C Cirstoiu, F A Vreju, D Grecu, G Mouterde, M Govoni, L Punzi, N S Damjanov, H I Keen, G AW Bruyn, L Terslev, M-A D'Agostino, C A Scirè, A Iagnocco

Letters

- 269** SARS CoV-2 infection among patients using immunomodulatory therapies
K L Winthrop, A E Brunton, S Beekmann, P Polgreen, J Baddley, K G Saag, C Calabrese, L Calabrese, P C Robinson, Z S Wallace, J R Curtis, the COVID-19 Study Team
- 271** Interleukin-6 receptor blockade with subcutaneous tocilizumab in severe COVID-19 pneumonia and hyperinflammation: a case-control study
N Potere, M Di Nisio, D Cibelli, R Scurti, A Frattari, E Porreca, A Abbate, G Parruti

- 272** Hydroxychloroquine shortages among patients with systemic lupus erythematosus during the COVID-19 pandemic: experience of the Systemic Lupus International Collaborating Clinics
A Mendel, S Bernatsky, A Askanase, S-C Bae, A E Clarke, N Costedoat-Chalumeau, D D Gladman, C Gordon, J Hanly, S Jacobsen, K Kalumian, A Mak, M Mosca, B A Pons-Estel, G Ruiz-Irastorza, M Urowitz, É Vinet

- 274** The use of tocilizumab and tofacitinib in patients with resolved hepatitis B infection: a case series
N Serling-Boyd, A M Mohareb, A Y Kim, E P Hyle, Z S Wallace

Electronic pages

- e12** Coronavirus disease 19 (Covid-19) and non-steroidal anti-inflammatory drugs (NSAID)
A Giollo, G Adami, D Gatti, L Idolazzi, M Rossini
- e13** Non-steroidal anti-inflammatory treatment during covid-19: friend or foe? Response to: 'Coronavirus disease 19 (Covid-19) and non-steroidal anti-inflammatory drugs (NSAID)' by Giollo *et al*
S Monti, C Montecucco

- e14** COVID-19 pneumonia in a large cohort of patients treated with biological and targeted synthetic antirheumatic drugs
E Conticini, E Bargagli, M Bardelli, G D Rana, C Baldi, P Cameli, S Gentileschi, D Bennett, P Falsetti, N Lanzarone, F Bellisai, C Barreca, R D'Alessandro, L Cantarini, B Frediani
- e15** Prevalence of COVID-19 among patients with rheumatic diseases: the need to await results from large collaborative studies. Response to: 'COVID-19 pneumonia in a large cohort of patients treated with biological and targeted synthetic antirheumatic drugs' by Conticini *et al*
S Monti, C Montecucco
- e16** Rheumatic diseases in intensive care unit patients with COVID-19
S Moiseev, S Avdeev, M Brovko, A Yavorovskiy, P I Novikov, K Umbetova, L Akulleina, Nya Tsareva, V Fomin
- e17** Comorbidities and rheumatological diseases at the time of COVID-19. Response to: 'Rheumatic diseases in intensive care unit patients with COVID-19' by Moiseev *et al*
S Monti, C Montecucco
- e18** What is the true incidence of COVID-19 in patients with rheumatic diseases?
E G Favalli, F Ingegnoli, R Cimaz, R Caporali
- e19** Is there a future for hydroxychloroquine/chloroquine in prevention of SARS-CoV-2 infection (COVID-19)?
S Moiseev, S Avdeev, M Brovko, P Novikov, V Fomin
- e20** Response to 'Is there a future for hydroxychloroquine/chloroquine in prevention of SARS-CoV-2 infection (COVID-19)?' by Moiseev *et al*
F R Spinelli, F Ceccarelli, M Di Franco, F Conti
- e21** Patients with lupus are not protected from COVID-19
A H Sawalha
- e22** No evidence so far on the protective effect of hydroxychloroquine to prevent COVID-19: comment by Joob and Wiwanitkit
V C Romão, A R Cruz-Machado, J E Fonseca
- e23** SLE patients are not immune to covid-19: importance of sending the right message across
M Goyal
- e24** Response to: 'Patients with lupus are not protected from COVID-19: a comment' by Sawalha, 'No evidence so far on the protective effect of hydroxychloroquin to prevent COVID-19: response to the Comment by Joob and Wiwanitkit' by Romão *et al* and 'SLE patients are not immune to COVID-19: importance of sending the right message across' by Goyal
B Joob, V Wiwanitkit
- e25** Are patients with systemic lupus erythematosus at increased risk for COVID-19?
E G Favalli, M Gerosa, A Murgo, R Caporali
- e26** Response to: 'Are patients with systemic lupus erythematosus at increased risk for COVID-19?' by Favalli *et al*
A Mathian, Z Amoura
- e27** Correction: *Knee osteoarthritis risk in non-industrial societies undergoing an energy balance transition: evidence from the indigenous Tarahumara of Mexico*
- e28** Correction: *High prevalence of spondyloarthritis-like MRI lesions in postpartum women: a prospective analysis in relation to maternal, child and birth characteristics*