

**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: © 2022 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

- 151** Epigenetic profiling of twins identify repression of KLF4 as a novel pathomechanism in systemic sclerosis
J H W Distler, S O'Reilly

Rheumatoid arthritis

- 153** Baseline predictors of different types of treatment success in rheumatoid arthritis
D Capelusnik, D Aletaha
- 159** Perceptions and experiences of individuals at-risk of rheumatoid arthritis (RA) knowing about their risk of developing RA and being offered preventive treatment: systematic review and thematic synthesis of qualitative studies
H J Siddle, L S Chapman, K Mankia, C Zăbălan, M Kouloumas, K Raza, M Falahee, J Kerry, A Kerschbaumer, D Aletaha, P Emery, S H Richards

- 169** Joint inflammation tends to recur in the same joints during the rheumatoid arthritis disease course
S L Heckert, S A Bergstra, X M E Matthijssen, Y P M Goekoop-Ruiterman, F Fodili, S ten Wolde, C F Allaart, T W J Huizinga

- 175** Trajectory clusters of radiographic progression in patients with rheumatoid arthritis: associations with clinical variables
A Platzter, F Alasti, J S Smolen, D Aletaha, H Radner, S Blüml

- 184** Integrated safety analysis of filgotinib in patients with moderately to severely active rheumatoid arthritis receiving treatment over a median of 1.6 years
K L Winthrop, Y Tanaka, T Takeuchi, A Kivitz, F Matzkies, M C Genovese, D Jiang, K Chen, B Bartok, A Jahreis, R Besuyen, G R Burmester, J-E Gottenberg

- 193** Loss of balance between protective and pro-inflammatory synovial tissue T-cell polyfunctionality predates clinical onset of rheumatoid arthritis
A Floudas, N Neto, C Orr, M Canavan, P Gallagher, C Hurson, M G Monaghan, S Nagpar, R H Mullan, D J Veale, U Fearon

- 206** Incidence and risk factors for herpes zoster in patients with rheumatoid arthritis receiving upadacitinib: a pooled analysis of six phase III clinical trials
K L Winthrop, P Nash, K Yamaoka, E Mysler, N Khan, H S Camp, Y Song, J L Suboticki, J R Curtis

Inflammatory arthritis

- 214** Targeting the IL-6–Yap–Snail signalling axis in synovial fibroblasts ameliorates inflammatory arthritis
R A Symons, F Colella, F L Collins, A J Rafiqay, K Kania, J J McClure, N White, I Cunningham, S Ashraf, E Hay, K S Mackenzie, K A Howard, A H K Riemen, A Manzo, S M Clark, A J Roelofs, C De Bari

Psoriatic arthritis

- 225** Efficacy and safety of risankizumab for active psoriatic arthritis: 24-week results from the randomised, double-blind, phase 3 KEEPSAKE 1 trial
L E Kristensen, M Keiserman, K Papp, L McCasland, D White, W Lu, Z Wang, A M Soliman, A Eldred, L Barcomb, F Behrens

Imaging

- 232** Very low prevalence of ultrasound-detected tenosynovial abnormalities in healthy subjects throughout the age range: OMERACT ultrasound minimal disease study
J Trickey, I Sahbudin, M Ammitzbøll-Danielsen, I Azzolin, C Borst, A Bortoluzzi, G AW Bruyn, P Carron, C Ciurtin, G Filippou, J Flićinski, D Fodor, H Gouze, M Gutierrez, H B Hammer, E-M Hauge, A Iagnocco, K Ikeeda, R Karalilova, H I Keen, M Kortekaas, G La Paglia, G Leon, P Mandl, M Maruseac, M Milcher, M A Montada, E Naredo, S Ohmendorf, C Pineda, M N B Rasch, C Reátegui-Sokolova, G Sakellariou, T Serban, CA Sifuentes-Cantú, M S Stoenoiu, T Suzuki, L Terslev, I Tinazzi, F A Vreju, R Wittoek, M-A D'Agostino, A Filer

MORE CONTENTS ►



Member since 2008

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/>

- 237** Choose wisely: imaging for diagnosis of axial spondyloarthritis



T Diekhoff, I Eshed, F Radny, K Ziegeler, F Proft, J Greese, D Deppe, R Biesen, K G Hermann, D Poddubnyy

Systemic lupus erythematosus

- 243** Genomic sequencing and functional analyses identify MAP4K3/GLK germline and somatic variants associated with systemic lupus erythematosus



H-C Chuang, W-T Hung, Y-M Chen, P-M Hsu, J-H Yen, J-L Lan, T-H Tan

- 255** Human SLE variant *NCF1*-R90H promotes kidney damage and murine lupus through enhanced Tfh2 responses induced by defective efferocytosis of macrophages

L Geng, J Zhao, Y Deng, I Molano, X Xu, L Xu, P Ruiz, Q Li, X Feng, M Zhang, W Tan, D L Kamen, S-C Bae, G S Gilkeson, L Sun, B P Tsao

Systemic sclerosis

- 268** Antifibrotic factor KLF4 is repressed by the miR-10/TFAP2A/TBX5 axis in dermal fibroblasts: insights from twins discordant for systemic sclerosis



M Malaab, L Renaud, N Takamura, K D Zimmerman, W A da Silveira, P S Ramos, S Haddad, M Peters-Golden, L R Penke, B Wolf, G Hardiman, C D Langefeld, T A Medsger, C A Feghali-Bostwick

Autoimmunity

- 278** Whole gut virome analysis of 476 Japanese revealed a link between phage and autoimmune disease



Y Tomofuji, T Kishikawa, Y Maeda, K Ogawa, T Nii, T Okuno, E Oguro-Igashira, M Kinoshita, K Yamamoto, K Sonehara, M Yagita, A Hosokawa, D Motooka, Y Matsumoto, H Matsuoka, M Yoshimura, S Ohshima, S Nakamura, H Inohara, H Mochizuki, K Takeda, A Kumanooh, Y Okada

Letters

- 289** Clinical characteristics and outcomes of COVID-19 breakthrough infections among vaccinated patients with systemic autoimmune rheumatic diseases

C Cook, N J Patel, K M D'Silva, T Y -T Hsu, M DiIorio, L Prisco, L W Martin, K Vanni, A Zaccardelli, D Todd, J A Sparks, Z S Wallace

- 291** Booster-dose SARS-CoV-2 vaccination in patients with autoimmune disease: a case series

C M Connolly, M Teles, S Frey, B J Boyarsky, J L Alejo, W A Werbel, J Alhayda, L Christopher-Stine, J Garonzik-Wang, D L Segev, J J Paik

- 293** Temporary hold of mycophenolate augments humoral response to SARS-CoV-2 vaccination in patients with rheumatic and musculoskeletal diseases: a case series

C M Connolly, T P-Y Chiang, B J Boyarsky, J A Ruddy, M Teles, J L Alejo, A Massie, W A Werbel, A A Shah, L Christopher-Stine, J Garonzik-Wang, D L Segev, J J Paik

- 295** Inactivated vaccines may not provide adequate protection in immunosuppressed patients with rheumatic diseases

P Shenoy, S Ahmed, A Paul, S Cherian, A Vijayan, S AS Babu, A Sukumaran

- 296** Impact of sustaining SDAI remission for preventing incident of bone fragility fracture in patient with rheumatoid arthritis

I Yoshii, N Sawada, T Chijiwa, S Kokei

- 299** Fat mass and response to TNF α blockers in early axial spondyloarthritis: an analysis of the DESIR cohort

A Molto, S Tang, B Combe, M Dougados, P Richette

- 301** Anti-ANP32A antibodies in systemic sclerosis

R Wallwork, L Casciola-Rosen, A A Shah

Electronic pages

- e18** The cost of arthralgia 'pretreatment' to prevent rheumatoid arthritis

B M Rothschild

- e19** Response to: 'The cost of arthralgia 'pretreatment' to prevent rheumatoid arthritis' by Rothschild

A van der Helm-van Mil, R BM Landewé

- e20** Effectiveness and safety of ruxolitinib for the treatment of refractory systemic idiopathic juvenile arthritis like associated with interstitial lung disease : a case report

B Bader-Meunier, A Hadchouel, L Berteloot, L Polivka, V Béziat, J-L Casanova, R Lévy

- e21** Response to: 'Effectiveness and safety of ruxolitinib for the treatment of refractory systemic idiopathic juvenile arthritis like associated with interstitial lung disease: case report' by Bader-Meunier *et al*

V E Saper, G Chen, P Khatri, E D Mellins

- e22** Do 2019 European League against rheumatism/ American College of Rheumatology classification criteria for systemic lupus erythematosus also indicate the disease activity?

J Teng, Z Zhou, F Wang, Y Sun, H-L Liu, X Cheng, Y Su, H Shi, C Yang, J Ye

- e23** Response to: 'Do 2019 European League against rheumatism/American College of Rheumatology classification criteria for systemic lupus erythematosus also indicate the disease activity?' by Teng *et al*
M Aringer, K Costenbader, T Dörner, S R Johnson
- e24** Dupilumab as a *potential* steroid-sparing treatment for IgG4-related disease
E Della-Torre, M Lanzillotta, M-R Yacoub
- e25** Response to: 'Dupilumab as a *potential* steroid-sparing treatment for IgG4-related disease' by Della-Torre *et al*
R S Simpson, J K Lee
- e26** Correspondence on: 'Dupilumab as a novel steroid-sparing treatment for IgG₄-related disease' by Simpson *et al*
M Ebbo, B De Sainte-Marie, R Muller, C Piperoglou, A Grados, F Vély, N Schleinitz
- e27** Response to: 'Correspondence on: 'Dupilumab as a novel steroid-sparing treatment for IgG4-related disease' by Simpson *et al*' by Ebbo *et al*
R S Simpson, J K Lee
- e28** Interleukin-4 as an emerging therapeutic target for IgG4-related disease
M Akiyama, Y Kaneko, T Takeuchi
- e29** Response to : 'Interleukin-4 as a emerging target for IgG4-related disease' by Akiyama *et al*
R S Simpson, J K Lee
- e30** Total adenosine deaminase highly correlated with adenosine deaminase 2 activity in serum
Z-W Gao, X Wang, F Lin, K Dong
- e31** Response to: 'Total adenosine deaminase highly correlated with adenosine deaminase 2 activity in serum' by Gao *et al*
P Y Lee, Z Huang, M S Hershfield, P A Nigrovic
- e32** Rheumatic disorders associated with immune checkpoint inhibitors: what about myositis? An analysis of the WHO's adverse drug reactions database
T Nguyễn, A T J Maria, C Ladhari, P Palassin, X Quantin, C Lesage, G Taïeb, X Ayrygnac, P Rullier, D Hillaire-Buys, O Lambotte, P Guilpain, J-L Faillie
- e33** A case of episodic and refractory arthritis due to a novel variant of NLRP12
J Wang, Q Zhang, L Xu, C Lv, R Liu, M Zhang, W Tan
- e34** Correction: *Significant weight loss in systemic sclerosis: a study from the EULAR Scleroderma Trials and Research (EUSTAR) database*
- e35** Correction: *Emergent high fatality lung disease in systemic juvenile arthritis*