

**Editor**

Josef S Smolen

**Associate Editors**

Francis Berenbaum  
Dimitrios Boumpas  
Mary Crow  
Kimme Hyrich  
Rik Lories  
Iain McInnes  
Caroline Ospelt  
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](mailto: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.

**Heroes and pillars of rheumatology**

- 1341** EULAR 75-year anniversary: commentaries on ARD papers from 50 years ago  
*J WJ Bijlsma*

**Viewpoint**

- 1344** Implementation of recommendations in rheumatic and musculoskeletal diseases: considerations for development and uptake  
*E Loza, L Carmona, A Woolf, B Fautrel, D S Courvoisier, S Verstappen, S Aarrestad Provan, A Boonen, T Vliet Vlieland, F Marchioli, T Jasinski, K Van der Elst, M Ndosi, K Dziedzic, J M Carrasco*

**Education**

- 1348** Assessing acceptability and identifying barriers and facilitators to implementation of the EULAR recommendations for patient education in inflammatory arthritis: a mixed-methods study with rheumatology professionals in 23 European and Asian countries  
*S E Bennett, H A Zangi, I Larsson, C Beauvais, C Boström, A Domján, Y van Eijck-Hustings, K Van der Elst, F Fayet, R J O Ferreira, M Fusama, M Geneva-Popova, M d C Herrero Manso, K Hoepfer, B Jones, M L Kukkuriäinen, S K Gladys Kwok, P Minnock, T Nava, J Primdahl, R Rawat, M Sierakowska, M Stoffer-Marx, A van Tubergen, M Ndosi*

**Rheumatoid arthritis**

- 1358** Effectiveness of TNF-inhibitors, abatacept, IL6-inhibitors and JAK-inhibitors in 31 846 patients with rheumatoid arthritis in 19 registers from the 'JAK-pot' collaboration  
*K Lauper, M Iudici, D Mongin, S A Bergstra, D Choquette, C Codreanu, R Cortz, D De Cock, L Dreyer, O Elkayam, E-M Hauge, D Huschek, K L Hyrich, F Iannone, N Inanc, L Kearsley-Fleet, E K Kristianslund, T K Kvien, B F Leeb, G Lukina, D C Nordström, K Pavelka, M Pombo-Suarez, Z Rotar, M J Santos, A Strangfeld, P Verschueren, D S Courvoisier, A Finckh*
- 1367** Tumour necrosis factor inhibitor use during pregnancy is associated with increased birth weight of rheumatoid arthritis patients' offspring  
*H T W Smeele, E Röder, A G M G J Mulders, E A P Steegers, R J E M Dolhain*

- 1374** Impact of pre-existing background therapy on placebo responses in randomised controlled clinical trials of rheumatoid arthritis  
*A Kerschbaumer, Z I Rivai, J S Smolen, D Aletaha*

- 1379** Standardisation of ACPA tests: evaluation of a new candidate reference preparation  
*L Van Hoovels, L Studholme, B Vander Cruyssen, D Sieghart, C Bowroy, E Nagy, R Pullerits, S Čučnik, C Dahle, I Heijnen, L Bernasconi, F Benkhadra, L Bogaert, S Van Den Bremt, A Van Liedekerke, G Vanheule, J Robbrecht, C Wirth, R Müller, D Kyburz, C Sjöwall, A Kastbom, R Ješe, B Jovancevic, E Kiss, P Jacques, D Aletaha, G Steiner, P Verschueren, X Bossuyt*

- 1385** Longitudinal trajectories of fatigue in early RA: the role of inflammation, perceived disease impact and early treatment response  
*M Doumen, S Pazmino, D Bertrand, D De Cock, J Joly, R Westhovens, P Verschueren*

**Psoriatic arthritis**

- 1392** Treat-to-target dose reduction and withdrawal strategy of TNF inhibitors in psoriatic arthritis and axial spondyloarthritis: a randomised controlled non-inferiority trial  
*C AJ Michielsens, N den Broeder, F HJ van den Hoogen, E AM Mahler, S Teerenstra, D van der Heijde, L M Verhoef, A A den Broeder*

- 1400** Keratinocyte-derived S100A9 modulates neutrophil infiltration and affects psoriasis-like skin and joint disease  
*L F Mellor, N Gago-Lopez, L Bakiri, F N Schmidt, B Busse, S Rauber, M Jimenez, D Megias, S Oterino-Sogo, R Sanchez-Prieto, S Grivennikov, X Pu, J Oxford, A Ramming, G Schett, E F Wagner*

**Systemic lupus erythematosus**

- 1409** Cross-species transcriptome analysis for early detection and specific therapeutic targeting of human lupus nephritis  
*E Frangou, P Garantziotis, M Grigoriou, A Banos, D Nikolopoulos, A Pieta, S A Doumas, A Fanouriakis, A Hatzioannou, T Manoloukou, T Alissafi, P Verginis, E Athanasiadis, E Dermizakis, G Bertias, A Filia, D T Boumpas*
- 1420** Weaning of maintenance immunosuppressive therapy in lupus nephritis (WIN-Lupus): results of a multicentre randomised controlled trial  
*N Jourde-Chiche, N Costedoat-Chalumeau, K Baumstarcke, A Loundou, L Bouillet, S Buryte, V Caudwell, L Chiche, L Couzi, L Daniel, C Deligny, B Dussol, S Faguer, P Gobert, G Gondran, A Huan, A Hummel, E Kalbacher, A Karras, M Lambert, V Le Guern, L Lebourg, S Loubière, H Maillard-Lefebvre, F Maurier, M Pha, V Queyrel, P Remy, F Sarrot-Reynauld, D Verhelst, E Hachulla, Z Amoura, E Daugas, for the WIN-Lupus study group*

**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

- 1428** Hypomethylation of miR-17-92 cluster in lupus T cells and no significant role for genetic factors in the lupus-associated DNA methylation signature  
*P Côté, X Roopnarinesingh, L Ortiz-Fernández, K McKinnon-Maksimowicz, E E Lewis, J T Merrill, W J McCune, J D Wren, A H Sawalha*

## Vasculitis

- 1438** The effect of achieving serological remission on subsequent risk of relapse, end-stage renal disease and mortality in ANCA-associated vasculitis: a target trial emulation study  
*G McDermott, X Fu, C Cooke, C Ahola, B Doliner, J Hanberg, J H Stone, H K Choi, Y Zhang, Z S Wallace*

## Autoimmunity

- 1445** Risk of irAEs in patients with autoimmune diseases treated by immune checkpoint inhibitors for stage III or IV melanoma: results from a matched case-control study  
*L Plaçais, S Dalle, O Dereure, S Trabelsi, S Dalac, D Legoupil, H Montaudré, J-P Arnault, J De Quatrebarbes, P Saiag, F Brunet-Possenti, T Lesimple, E Maubec, F Aubin, F Granel-Brocard, J-J Grob, P-E Stoeber, C Allayous, B Oriano, C Dutriaux, L Mortier, C Lebbe*

## Autoinflammatory disorders

- 1453** Gain-of-function mutations in *ALPK1* cause an NF- $\kappa$ B-mediated autoinflammatory disease: functional assessment, clinical phenotyping and disease course of patients with ROSAH syndrome  
*C T Kozycki, S Kodati, L Hurny, H Wang, B M Warner, P Jani, D Hammoud, M S Abu-Asab, Y Jitayasothon, M J Matlapalli, W L Tsai, E Ullah, P Zhou, X Tian, A Soldatos, N Moutsopoulos, M Kao-Hsieh, T Heller, E W Cowen, C-C R Lee, C Toro, S Kalsi, Z Khavandgar, A Baer, M Beach, D Long Priel, M Nehrebecky, S Rosenzweig, T Romeo, N Deutch, L Brenchley, E Pelayo, W Zein, N Sen, A H Yang, G Farley, D A Sweetser, L Briere, J Yang, F de Oliveira Poswar, I V D Schwartz, T Silva Alves, P Dusser, I Koné-Paut, I Touitou, S M Titah, P M van Hagen, R T A van Wijck, P J van der Speke, H Yano, A Benneche, E M Apalset, R W Jansson, R R Caspi, D B Kuhns, M Gadina, H Takada, H Ida, R Nishikomori, E Verrecchia, E Sangiorgi, R Manna, B P Brookes, L Sobrin, R B Hufnagel, D Beck, F Shao, A K Ombrello, I Aksenitjevich, D L Kastner, Undiagnosed Diseases Network*

## Osteoarthritis

- 1465** NOD/RIPK2 signalling pathway contributes to osteoarthritis susceptibility  
*M J Jurynec, C M Gavile, M Honegger, Y Ma, S R Veerabhadraiah, K A Novak, K Hoshijima, N H Kazmers, D J Grunwald*

## Images in rheumatology

- 1474** Livedo racemosa and thrombotic vasculitides of scalp in systemic lupus erythematosus  
*J-Y Lee, C-Y Tsai, H-T Liao*

## Letters

- 1476** Chronic glucocorticoid maintenance treatment is associated with the risk of SARS-CoV-2 infection in patients with systemic lupus erythematosus who received vaccination  
*G A Ramirez, L M Argolini, T Schioppa, S Sciascia, L Moroni, G Moroni, R A Sinico, G Bonelli, F Alberici, F Mescia, F Tamborini, P Miraglia, C Bellocchi, L Beretta, D Roccatello, E P Bozzolo, R Caporali, M Gerosa, L Dagna, On behalf of SMILE, Milan Lupus Consortium*
- 1477** Oral antiviral treatment in patients with systemic rheumatic disease at risk for development of severe COVID-19: a case series  
*G E Fragoulis, C Koutsianas, K Fragiadaki, I Mariolis, S Panopoulos, C Tsalapaki, M Pappa, T Dimitroulas, M G Tektonidou, D Vassilopoulos, P P Sfikakis*
- 1479** Guselkumab for treating immune checkpoint inhibitor-induced psoriatic arthritis  
*K Takeda, N Yanagitani*
- 1480** Genetically proxied IL-6 receptor inhibition and risk of polymyalgia rheumatica  
*S S Zhao, D Gill*

## Electronic pages

- e188** Correspondence on 'Characteristics associated with hospitalisation for COVID-19 in people with rheumatic disease: data from the COVID-19 Global Rheumatology Alliance physician-reported registry' by Gianfrancesco *et al.* Compassionate use of tocilizumab in severe COVID-19 with hyperinflammation prior to advent of clinical trials – a real-world district general hospital experience  
*A Khan, A Cole, N Bhaduria, M El-Hassan, D Abdulla, T Axon, Z Fatah, J J Manson, J Moreno-Cuesta, D Mukerjee*
- e189** Comment on 'Characteristics associated with hospitalisation for COVID-19 in people with rheumatic disease: data from the COVID-19 global rheumatology alliance physician-reported registry' by Gianfrancesco *M et al.*  
*I Andreica, D Kiefer, G A Rezniczek, R Jasi, B Buehring, U Kiltz, X Baraliakos, J Braun*
- e190** COVID-19 outcomes in patients with systemic autoimmune diseases treated with immunomodulatory drugs  
*K Ansari, A Taghizadieh, S Safiri, A Malek Mahdavi, S Ranjbar, S Teymouri, M Ahangari Maleki, A Khabbazi*
- e191** COVID-19 Global Rheumatology Alliance Registry, anti-IL-6 therapy, shared decision-making and patient outcomes. Response to: 'Correspondence on 'Characteristics associated with hospitalisation for COVID-19 in people with rheumatic disease: data from the COVID-19 Global Rheumatology Alliance physician-reported registry' by Gianfrancesco *et al.* Compassionate use of tocilizumab in severe COVID-19 with hyperinflammation prior to advent of clinical trials – a real-world district general hospital experience' by Khan *et al.*, 'Comment on 'Characteristics associated with hospitalisation for COVID-19 in people

- with rheumatic disease: data from the COVID-19 global rheumatology alliance physician-reported registry' by Gianfrancesco M *et al*' by Andreica *et al* and 'COVID-19 outcomes in patients with systemic autoimmune diseases treated with immunomodulatory drugs' by Ansarin *et al* M Gianfrancesco, K L Hyrich, J Yazdany, P M Machado, P C Robinson
- e192** Similarities and differences between severe COVID-19 pneumonia and anti-MDA-5-positive dermatomyositis-associated rapidly progressive interstitial lung diseases: a challenge for the future Y Wang, G Du, G Zhang, M Matucci-Cerinic, D E Furst
- e193** Response to: 'Similarities and differences between severe COVID-19 pneumonia and anti-MDA-5 positive dermatomyositis associated rapidly progressive interstitial lung diseases: a challenge for the future' by Wang *et al* J A Lamb, S Megremis, H Chinoy
- e194** Correspondence on 'Interleukin-6 receptor blockade with subcutaneous tocilizumab in severe COVID-19 pneumonia and hyperinflammation: a case-control study' by Potere *et al* L Buckley
- e195** Response to: 'Correspondence on 'Interleukin-6 blockade with subcutaneous tocilizumab in severe COVID-19 pneumonia and hyperinflammation: a case-control study' by Potere *et al*' by Buckley N Potere, M Di Nisio, D Cibelli, R Scurti, A Frattari, E Porreca, A Abbate, G Parruti
- e196** Correspondence on: 'Interleukin-6 blockade with sarilumab in severe COVID-19 pneumonia with systemic hyperinflammation—an open-label cohort study' by Della-Torre *et al* C Cheng, F Zhang
- e197** Impact of sarilumab on mechanical ventilation in patients with COVID-19. Response to: 'Correspondence on: 'Interleukin-6 blockade with sarilumab in severe COVID-19 pneumonia with systemic hyperinflammation—an open-label cohort study' by Della-Torre *et al*' by Cheng and Zhang E Della-Torre, G Landoni, A Zangrillo, L Dagna
- e198** Colchicine treatment in community healthcare setting to prevent severe COVID-19 E Della-Torre, G A Ramirez, L Dagna, M Tresoldi
- e199** Anti-inflammatory action of colchicine in hospitalised patients with COVID-19. Response to: 'Colchicine treatment in community healthcare setting to prevent severe COVID-19' by Della-Torre *et al* S Piantoni, E Colombo, R Furloni, L Andreoli, A Brucato, M Imazio, P Airó, M Scarsi
- e200** Adherence to medication in patients with rheumatic diseases during COVID-19 pandemic A Khabbazi, H Kavandi, R Paribanaem, R Khabbazi, A Malek Mahdavi
- e201** Education and treatment adherence during the COVID-19 pandemic. Response to: 'Adherence to medication in patients with rheumatic diseases during COVID-19 pandemic' by Khabbazi *et al* R A Pineda-Sic, G Serna-Peña, J A Cardenas-de la Garza, S A Torres-Castillo, D A Galarza-Delgado, D E Flores-Alvarado
- e202** High dosage of methylprednisolone as a rescue, second-line treatment in COVID-19 patients who failed to respond to tocilizumab E Conticini, F Franchi, D Bennett, S Valente, M A Mazzei, E Bargagli, L Volterrani, S Scolletta, B Frediani
- e203** Response to: 'High dosage of Methylprednisolone as a rescue, second-line treatment in COVID-19 patients who failed to respond to Tocilizumab' by Conticini *et al* S Ramiro, R Mostard, R BM Landewé
- e204** Tocilizumab for the treatment of polyarteritis nodosa: a systematic literature review. Correspondence on 'Tofacitinib for polyarteritis nodosa: a tailored therapy' by Rimar *et al* M Akiyama, Y Kaneko, T Takeuchi
- e205** Response to: 'Tofacitinib for the treatment of polyarteritis nodosa: a literature review'. Correspondence on 'Tofacitinib for polyarteritis nodosa: a tailored therapy' by Rimar *et al* D Rimar, A Awisat, L Kaly, G Slobodin, I Rosner, M Rozenbaum, S Ginsberg, E Starosvetsky, A Alpert, S Shen-Orr
- e206** Correspondence to: 'Combination of human umbilical cord mesenchymal (stromal) stem cell transplantation with IFN- $\gamma$  treatment synergistically improves the clinical outcomes of patients with rheumatoid arthritis' K S-K Ma, L-T Wang, S-Y Tsai
- e207** Response to: 'Correspondence to: 'Combination of human umbilical cord mesenchymal stem cell transplantation with IFN- $\gamma$  treatment synergistically improves the clinical outcomes of patients with rheumatoid arthritis'' by Ma *et al* Y Yang, X He, M Yao, W Xing, L Ao, J A Bellanti, S G Zheng, X Xu
- e208** Tapering antirheumatic drugs in a resource-poor setting: real-world evidence M Haroon, Z Khan, M Aamer
- e209** Response to: 'Tapering antirheumatic drugs in a resource-poor setting: real-world evidence' by Haroon *et al* E van Mulligen, P H P de Jong
- e210** Imaging in immune checkpoint inhibitor-induced polymyalgia rheumatica K S M van der Geest, M Sandovici, A Rutgers, T J N Hiltermann, S F Oosting, R H J A Slart, E Brouwer
- e211** Public/private partnerships, at what price? M Boers
- e212** Correction: *Granulocyte colony stimulating factor exacerbates antineutrophil cytoplasmic antibody vasculitis*