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.

2 Durcan L, O'Dwyer T, Petri M. Management strategies and future directions for systemic lupus erythematosus in adults. *Lancet* 2019; **393:** 2332–43.

3 van Vollenhoven R, Voskuyl A, Bertsias G, et al. A framework for remission in SLE: consensus findings from a large international task force on definitions of remission in SLE (DORIS). *Ann Rheum Dis* 2017; **76:** 554–61.

4 Melissa N, Linden JG, Hieu TN, et al. A cross sectional and in vitro study of GC signatures in SLE and the effects of IFN. *Lancet Rheumatol* 2021; published online March 30. https://doi.org/10.1016/S2665-9913(21)00006-0.

5 Rönnblom L, Leonard D. Interferon pathway in SLE: one key to unlocking the mystery of the disease. *Lupus Sci Med* 2019; **6:** e000270.

6 Chasset F, Ribi C, Trendelenburg M, et al. Identification of highly active systemic lupus erythematosus by combined type I interferon and neutrophil gene scores vs classical serologic markers. *Rheumatology (Oxford)* 2020; **59:** 3468–78.

7 Goulielmos GN, Zervou MI, Vazgiourakis VM, Ghodke-Puranik Y, Garyfallos A, Niewold TB. The genetics and molecular pathogenesis of systemic lupus erythematosus (SLE) in populations of different ancestry. *Gene* 2018; **668:** 59–72.

8 Felger JC, Haroon E, Woolwine BJ, Raison CL, Miller AH. Interferon-alpha-induced inflammation is associated with reduced glucocorticoid negative feedback sensitivity and depression in patients with hepatitis C virus. *Physiol Behav* 2016; **166:** 14–21.

9 Furie RA, Morand EF, Bruce IN, et al. Type I interferon inhibitor anifrolumab in active systemic lupus erythematosus (TULIP-1): a randomised, controlled, phase 3 trial. *Lancet Rheumatol* 2019; **1:** e208–19.

10 Morand EF, Furie R, Tanaka Y, et al. Trial of anifrolumab in active systemic lupus erythematosus. *N Engl J Med* 2020; **382:** 211–21.

Patients with gout: an under-recognised group at high risk of COVID-19

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Since the first reports of COVID-19 in late 2019, there has been a rapid acceleration in the understanding of predictors of poor outcomes of SARS-CoV-2 infection, such as death or severe illness requiring hospitalisation. Concern among rheumatologists has primarily focused on the risk of these outcomes in patients with autoimmune inflammatory rheumatic diseases, particularly those undergoing immunosuppressive therapy.[1] Overall, the risk profile is favourable for patients with rheumatic diseases who are taking many commonly used medicines, including non-steroidal anti-inflammatory drugs, hydroxychloroquine, methotrexate, and most biologics. However, moderate-dose and high-dose glucocorticoids, rituximab, sulphasalazine, and transplantation-like immunosuppressants are associated with poor outcomes.[1]

Recommendations by international rheumatology societies have provided invaluable guidance for the clinical management of patients with rheumatic disease throughout the pandemic.[2–4] These recommendations highlight the importance of assessing the risk of poor outcomes after SARS-CoV-2 infection on the basis of age and of comorbidities such as cardiovascular disease, overweight and obesity, and kidney disease. Detailed advice has been provided for patients with autoimmune rheumatic diseases and for those taking disease-modifying anti-rheumatic drugs and immunosuppressive medications. However, the management of patients with gout has not been specifically mentioned in these rheumatology recommendations, probably a reflection that the most widespread concern in the field is about risks associated with immunosuppressing medications, which (with the exception of glucocorticoids) are not used for gout management.

The omission of gout from these recent recommendations is perhaps surprising, given that the absolute risk for poor outcomes after SARS-CoV-2 infection in people with gout is likely to be among the highest among all patients with rheumatic diseases. In the general population, gout is associated with many risk factors for poor COVID-19 outcomes;[5] it is more common in men than in women, it occurs more often in older individuals, and it is strongly associated with overweight and obesity, cardiovascular disease, diabetes, and chronic kidney disease. These risk factors are even more pronounced in patients with gout who are referred to secondary or tertiary rheumatology clinics. For example, a previous analysis from our secondary care rheumatology clinic showed that more than half of patients with gout had a very high calculated risk (equal to or higher than 20%) of a cardiovascular event in 5 years, mostly due to existing cardiovascular disease or diabetic nephropathy; a third of patients had type 2 diabetes, and 95% had overweight or obesity.[6]

A further important consideration is the major disparity in COVID-19 outcomes according to ethnicity, with higher rates of hospitalisation and death in people of non-white ethnicity, including African Americans in the USA and Indigenous peoples, compared with white or European ethnic groups.[7] Importantly, gout is more common in Hmong, Māori (Indigenous

New Zealanders), and Pacific Peoples, and in non-Hispanic African Americans. Thus, the ethnic disparities in COVID-19 outcomes for Indigenous peoples and African Americans are likely to further amplify the risk of poor outcomes in people with gout.

Given the high absolute risk of poor COVID-19 outcomes in people with gout, we believe that guidance is urgently needed to address the management of gout during the COVID-19 pandemic. Gout has been under-represented in publications describing COVID-19 outcomes in people with rheumatic diseases to date, so we also encourage further research in this high-risk group. Specific questions for gout management include whether prednisolone should be avoided for the short-term management of gout flares when there is a high risk of SARS-CoV-2 exposure, given the higher risk of poor COVID-19 outcomes in patients taking long-term glucocorticoids;[1] whether colchicine and anakinra are preferred options for the management of gout flares, including acute flares, given their potential to improve outcomes in the context of severe COVID-19;[8,9] and whether there is additional benefit in adding daily low-dose colchicine as gout flare prophylaxis when there is a high risk of SARS-CoV-2 exposure.

Additionally, guidance about continuing and ensuring the supply and delivery of urate-lowering therapy is needed to avoid the potential consequences of poorly controlled gout and the need for high-dose glucocorticoids. Like so many patients who require rheumatology care, many people with gout have had their access to medicines interrupted during the pandemic.[10] Patients also report more difficulty with gout flares during the pandemic.[10] In times of disrupted healthcare delivery, ensuring that patients receive regular urate-lowering therapy and have a safe action plan for gout flares is essential for effective management. In addition, the encouraging results of the COLCORONA study[8] might lead to increased demand for colchicine and thus exacerbate difficulties in accessing colchicine for people with gout.

The COVID-19 pandemic has been a major concern for rheumatologists. However, the initial concern about universal poor outcomes in rheumatology patients has not been confirmed. What has become apparent is that there are a few classes of medications that are associated with an increased risk of poor outcomes, but importantly, comorbidity risks should be carefully examined because they can substantially increase the risk of poor outcomes, and also because they are common in patients with rheumatic diseases. We wish to highlight that, even when patients with gout are not taking immunosuppressants, their comorbidities mean that they have among the highest risk of poor COVID-19-related outcomes of all patients with rheumatic diseases.

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1 Strangfeld A, Schäfer M, Gianfrancesco MA, et al. Factors associated with COVID-19-related death in people with rheumatic diseases: results from the COVID-19 Global Rheumatology Alliance physician-reported registry. *Ann Rheum Dis* 2021; published online Jan 27. Doi:10.1136/annrheumdis-2020–219498.

2 Landewé RB, Machado PM, Kroon F, et al. EULAR provisional recommendations for the management of rheumatic and musculoskeletal diseases in the context of SARS-CoV-2. *Ann Rheum Dis* 2020; **79:** 851–58.

3 Mikuls TR, Johnson SR, Fraenkel L, et al. American College of Rheumatology guidance for the management of rheumatic disease in adult patients during the COVID-19 pandemic: version 3. *Arthritis Rheumatol* 2021; **73:** e1–12.

4 Tam LS, Tanaka Y, Handa R, et al. Care for patients with rheumatic diseases during COVID-19 pandemic: a position statement from APLAR. *Int J Rheum Dis* 2020; **23:** 717–22.

5 Williamson EJ, Walker AJ, Bhaskaran K, et al. Factors associated with COVID-19-related death using OpenSAFELY. *Nature* 2020; **584:** 430–36.

6 Colvine K, Kerr AJ, McLachlan A, et al. Cardiovascular disease risk factor assessment and management in gout: an analysis using guideline-based electronic clinical decision support. *N Z Med J* 2008; **121:** 73–81.

7 Bassett MT, Chen JT, Krieger N. Variation in racial/ethnic disparities in COVID-19 mortality by age in the United States: a cross-sectional study. *PLoS Med* 2020; **17:** e1003402.

8 Tardif J-C, Bouabdallaoui N, L'Allier PL, et al. Efficacy of Colchicine in non-hospitalized patients with COVID-19. *medRxiv* 2021; published online Jan 27. https://doi.org/10.1101/2021.01.26.21250494 (preprint).

9 Cavalli G, De Luca G, Campochiaro C, et al. Interleukin-1 blockade with high-dose anakinra in patients with COVID-19, acute respiratory distress syndrome, and hyperinflammation: a retrospective cohort study. *Lancet Rheumatol* 2020; **2:** e325–31.

10 Singh JA, Edwards NL. Gout management and outcomes during the COVID-19 pandemic: a cross-sectional internet survey. *Ther Adv Musculoskelet Dis* 2020; **12:** 1759720X20966124.