

## LETTERS

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### COVID-19 disease in patients with recurrent pericarditis during treatment with anakinra: comment on the article by Navarro-Millán et al

To the Editor:

We read with interest the article by Dr. Navarro-Millán and colleagues about the use of anakinra to prevent mechanical ventilation in patients with COVID-19 (1). However, it is also important to consider patients who develop COVID-19 while being treated with anakinra for their underlying condition (2).

We describe 5 patients, median age 43 years, with recurrent pericarditis (post-pericardiectomy in 1 case; idiopathic pericarditis in 4 cases) who developed COVID-19 disease during treatment with anakinra. Median duration of recurrent pericarditis was 48 months. All patients were being treated with anakinra when COVID-19 disease occurred, after having initially received treatment with glucocorticoids and/or nonsteroidal antiinflammatory drugs (including colchicine) (Table 1).

The patients developed COVID-19 disease between March 2020 and October 2020. Symptoms, usually mild, included fever, cough, ageusia, anosmia, headache, diarrhea, dyspnea, and chest pain (Table 1). SARS-CoV-2 was diagnosed by nasopharyngeal swab in 4 patients, and by serologic test in 1 patient, after symptoms began. Two patients went to the emergency room; in one case, chest radiograph showed a small lung infiltrate,

but neither of the patients required hospitalization. Treatment with anakinra was continued unchanged, and 3 patients received additional therapies after the development of COVID-19 disease (Table 1). All patients recovered completely within 15 days and had no recurrence of pericarditis.

Polytherapy is often necessary in patients with recurrent pericarditis and treatment with an interleukin-1 receptor antagonist may lead to resolution of symptoms (3); however, a concern may be raised that biologic therapy could aggravate the clinical course of COVID-19. Our small case series shows that anakinra therapy in patients with recurrent pericarditis may be associated with a benign clinical course. We propose that there is no reason to discontinue anakinra therapy if a patient with recurrent pericarditis develops COVID-19 disease (4–7). Our recommendation is consistent with the findings obtained in the study by Dr. Navarro-Millán et al (1).

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**Table 1.** Summary of main features of patients\*


Patient/age/sex	Pericardial disease duration, months	Therapy when COVID-19 occurred	COVID-19 clinical features	Adjusted/additional therapies during COVID-19	Hospitalization or ER visit	Duration of COVID-19 symptoms, days
1/54/M	12	Anakinra (100 mg every 48 hours)	Fever; cough; infiltrate in right middle lobe on chest radiograph; CRP and D-dimer elevation	Azithromycin	ER visit	5
2/15/M	21	Anakinra (100 mg every 3 days); colchicine (1 mg/day)	Low-grade fever; asthenia	None	None	2
3/43/F	48	Anakinra (100 mg every 4 days); colchicine (1 mg/day)	Fever; cough for 4 days; ageusia; anosmia; diarrhea; headache	None	None	15
4/35/F	54	Anakinra (100 mg/day); colchicine (1.5 mg/day); nadolol	Dry cough; fever for 3 days; asthenia; diarrhea; chest pain; normal CRP	Prednisone (25 mg/day for 5 days) then 12.5 mg/day; indomethacin	ER visit	10
5/78/F	60	Anakinra (100 mg/day); colchicine (1 mg/day); prednisone (2.5 mg every 2 days)	Low-grade fever for 2 days; dyspnea	Prednisone (2.5 mg/day); acetaminophen; amoxicillin-clavulanic acid	None	15

\* ER = emergency room; CRP = C-reactive protein.

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1. Navarro-Millán I, Sattui SE, Lakhanpal A, Zisa D, Siegel CH, Crow MK. Use of anakinra to prevent mechanical ventilation in severe COVID-19: a case series. *Arthritis Rheumatol* 2020;72:1990–7.
2. Imazio M, Brucato A, Lazaros G, Andreis A, Scarsi M, Klein A, et al. Anti-inflammatory therapies for pericardial diseases in the COVID-19 pandemic: safety and potentiality [review]. *J Cardiovasc Med (Hagerstown)* 2020;21:625–9.
3. Klein AL, Imazio M, Brucato A, Abbate A, Fang F, Insalaco A, et al. Phase 3 trial of interleukin-1 trap rilonacept in recurrent pericarditis. *N Engl J Med* 2020;2021;384:31–41.
4. Putman M, Chock YP, Tam H, Kim AH, Sattui SE, Berenbaum F, et al. Antirheumatic disease therapies for the treatment of COVID-19: a systematic review and meta-analysis. *Arthritis Rheumatol* 2021;73:36–47.
5. Chau AS, Weber AG, Maria NI, Narain S, Liu A, Hajizadeh N, et al. The longitudinal immune response to coronavirus disease 2019: chasing the cytokine storm [review]. *Arthritis Rheumatol* 2021;73:23–35.
6. Scarsi M, Piantoni S, Colombo E, Airó P, Richini D, Miclini M, et al. Association between treatment with colchicine and improved survival in a single-centre cohort of adult hospitalised patients with COVID-19 pneumonia and acute respiratory distress syndrome. *Ann Rheum Dis* 2020;79:1286–9.
7. Aomar-Millán A, Salvatierra J, Torres-Parejo Ú, Faro-Miguez N, Callejas-Rubio JL, Ceballos-Torres Á, et al. Anakinra after treatment with corticosteroids alone or with tocilizumab in patients with severe COVID-19 pneumonia and moderate hyperinflammation: a retrospective cohort study. *Intern Emerg Med* 2021;16:843–52.