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Biologics for psoriasis during COVID-19 outbreak

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Dear Editor,

we read with interest the letter by Lebowhl et al entitled "Should biologics for psoriasis be interrupted in the era of COVID-19?"¹. We share the concern that has been expressed about the possible impact of biologic therapies on the patient's susceptibility to COVID-19 infection. In addition to the infectious complications for biologic therapies reported during pivotal trials for psoriasis, we would like to draw attention to other aspects that might guide the decision whether to continue biologic therapy during the COVID-19 pandemic.

From a pathophysiologic point of view, a release of large amounts of pro-inflammatory cytokines, including some of those over-expressed in psoriasis, such as TNF-alpha and IL-33, occurs in patients with severe COVID-19, in particular during the acute respiratory distress syndrome which is the main cause of death from the infection². Pathogenesis of the widespread lung damage associated with severe acute respiratory syndrome (SARS)-CoV, which shares many etiologic, clinical and pathologic features with COVID-19, has been hypothesized to be caused more by an exaggerated immune response than the virus itself³. This implies that immune dysregulation is regarded as a highly important therapeutic target; a clinical trial is currently evaluating adalimumab in severe COVID-19 pneumonia⁴. Notably, a significant elevation in TNF-alpha and also IL-17 was found in plasma samples of patients with Middle East respiratory syndrome coronavirus (MERS)-CoV⁵, another respiratory disease caused by similar coronaviruses and associated with high morbidity and mortality. In contradistinction, IL-12 blockade might impair the antiviral cytokine IFN- γ

production. However, it must also be noted that patients with inherited defects in IL-12 signaling do not seem to be as severely impacted by infection with respiratory viruses.

Italy is strongly involved with COVID-19. Presently, an operating instruction on biologic therapies has been implemented in our hospital immunology network and shared by dermatologists, rheumatologists and gastroenterologists. Patients treated with biologics are classified in four categories and treated according to their own characteristics as follows:

- a) Patients not showing symptoms, or with mild respiratory symptoms (as mild cough without fever) and without close contact with confirmed COVID-19 patients: biologic therapy is continued;
- b) Patients experiencing moderate or severe respiratory symptoms (fever, cough and/or difficulty breathing) without close contact with confirmed COVID-19 patients: preventive transient interruption of biologic therapy until complete remission of respiratory symptoms and at least 72 hours without fever;
- c) Patients with mild respiratory symptoms and contact history with COVID-19 patients: preventative treatment discontinuation of biologic therapy until laboratory-confirmed negativity for the COVID-19 virus;
- d) Patients with moderate to severe respiratory symptoms and close contact or contact history with COVID-19 patients or with clinical/radiological criteria consistent with COVID-19: interruption of biologic therapy and prompt admission to COVID hospital.

A case by case evaluation in high risk population, as older patients with cardiovascular and pulmonary comorbidities, should be cautiously carried out.

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References

- 1) Lebwohl M, Rivera-Oyola R, Murrell DF. Should biologics for psoriasis be interrupted in the era of COVID-19? *J Am Acad Dermatology* (2020), doi: <https://doi.org/10.1016/j.jaad.2020.03.031>.
- 2) Huang C, Wang Y, Li X et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; 395:497-506.
- 3) Sarzi-Puttini P, Giorgi V, Sirotti S et al. COVID-19, cytokines and immunosuppression: what can we learn from severe acute respiratory syndrome? *Clin Exp Rheumatol*. 2020 Mar 22
- 4) Bashyam AM, Feldman SR. Should patients stop their biologic treatment during the COVID-19 pandemic. *J Dermatolog Treat*. 2020 Mar 19:1-2.
- 5) Mahallawi WH, Khabour OF, Zhang Q et al. MERS-CoV infection in humans is associated with a pro-inflammatory Th1 and Th17 cytokine profile. *Cytokine*. 2018 Apr; 104:8-13.