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LETTER

Antipsoriatic treatments during COVID-19 outbreak

Dear Editor,

We read with interest the paper by Conforti et al entitled "COVID-19 and psoriasis: is it time to limit treatment with immunosuppressants? A call for action."[1] In their letter, the authors wonder whether this is the most appropriate time to start immunosuppressive therapy with conventional or biological antipsoriatic treatments, such as cyclosporine (CsA), methotrexate and tumor necrosis factor (TNF)-alpha blockers. Indeed, they fear that the immunosuppressive effect of these drugs might increase the risk of infectious complications and promote the spreading of COVID-19 infection in patients with psoriasis.

Although we agree that currently the COVID-19 rate risk in immunosuppressed is largely unknown, we should like to raise a few points.

First, drugs may exert additional effects in addition to their known function. To cite one, the calcineurin inhibitor CsA, affecting the function of many members of the cyclophilin family, is able to block the replication of coronaviruses (CoV) of all genera.[2,3] However, its potential clinical application as anti-CoV therapeutic remains limited by its immunosuppressive effects.[4] Methotrexate, if used in low, noncytotoxic concentrations, is not able to inactivate antigen presentation by dendritic cells.[5]

Acute respiratory distress syndrome (ARDS) is the main death cause of COVID-19.[6] Pathophysiology of COVID-19 shows that a release of large amount of pro-inflammatory cytokines (IFN-alpha, IFN-gamma, IL-1-beta, IL-6, IL-12, IL-18, IL-33, TNF-alpha, TGF-beta) and chemokines (CCL2, CCL3, CCL5, CXCL8, CXCL9, CXCL10) occurs in patients with severe disease.[6] Such "cytokine storm" is one of the main causes of ARDS. In severe acute respiratory syndrome (SARS)-CoV-1, an infection caused by SARS-associated CoV, IL-6 and TNF-alpha are upregulated and induced by SARS-CoV spike protein via nuclear factor kappa-light-chain-enhancer of activated B cells pathway.[7] Receptors for the pro-inflammatory cytokine TNF-alpha have been hypothesized as promoters of pathogenesis of SARS-CoV.[8] IL-6 in serum is expected to predict the severity of COVID-19, thus there are perspectives on the use of an immunosuppressant, the monoclonal antibody against the receptor for IL-6, as potential therapeutic intervention for COVID-19. There is current evidence for possible clinical benefits of corticosteroids in critical patients, although there is no clinical guideline for their use.[9]

In conclusion, there is a complex interplay between viral replication and host immune response also in COVID-19. Because of the absence of cases analyzed, more studies need to evaluate the risk of immunosuppression in patients exposed to COVID-19. Immunosuppressive monotherapy, target therapy, and absence of significant comorbidities could be associated to a lower risk. Presently, a case-by-case assessment seems more appropriate than stopping the ongoing treatments or undertreating the patients with severe psoriasis.

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