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Should patients stop their biologic treatment during the COVID-19 pandemic

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EDITORIAL

Should patients stop their biologic treatment during the COVID-19 pandemic

The novel coronavirus (SARS-CoV-2) that causes COVID-19 has now reached all corners of the world, and our psoriasis patients are asking what this means for them. Even beyond preventing and controlling nosocomial infection in our clinics (Table 1), our treatment decisions must consider the current situation. Patients are asking whether they are at higher risk of being infected, whether they are at a higher risk of severe disease after being infected, and whether they need to discontinue their biologic treatment preemptively.

At this point, there is no specific clinical data on COVID-19 in patients with dermatologic disease or on biologics. While guidelines and package inserts suggest that biologics are contraindicated in case of clinically important active infections, these guides do not recommend stopping treatment because of potential infection risks in the community. Moreover, there does not seem to be evidence that TNF-α inhibition will increase the risk of SARS-CoV-2 infection, specifically. In seasonal influenza and H1N1 influenza, patients on an anti-TNF agents have a similar risk of infection compared with the general population (3).

COVID-19 pneumonia is characterized by an exaggerated immune response (cytokine storm) with high TNF-α levels, among other cytokines (4). While we do not have any real evidence that patients on psoriasis biologics will be more susceptible to being infected, for patients infected with SARS-CoV-2, it is possible that TNF-α inhibition may actually improve outcomes, as was hypothesized during the 2003 SARS outbreak (5,6). The lung damage of COVID-19 is, at least partially, mediated by the immune response against the virus, and it is theoretically possible that modulating that inflammation might even be protective (7).

Systemic corticosteroids are not recommended by the CDC during the acute phase, when possible, as this may prolong the duration of viral shedding (8,9). However, targeted TNF-α inhibition could more specifically modulate COVID-19's cytokine storm and reduce alveolar damage (5,6). In an H1N1 influenza mouse study, etanercept downregulated the similar excessive inflammatory response reducing mortality and enhancing host control of virus replication (7). A clinical trial is currently evaluating adalimumab for use in treating severe COVID-19 pneumonia—a promising signal that TNF-α inhibitors are, at the very least, not likely to be harmful to our patients if they are infected (10).

Like TNF-α inhibitors, there is little evidence either way on whether Il-17 or Il-23 antagonists affect viral infection rates, and nothing on COVID-19, specifically. For patients infected, evidence is mixed on the role of Il-17 in the immune response to viruses. Il-17 may have a paradoxical role in both enhancing antiviral immune response and exacerbating viral illness depending on the virus (11). However, it is hypothesized that agents blocking this pathway could have the potential to improve COVID-19's aberrant immune response and acute respiratory distress syndrome-related mortality (12). It is unlikely that these agents are disrupting the immune system's viral response in a way that would cause higher rates of COVID-19. Secukinumab does not disrupt patients' ability to develop a good response to seasonal influenza vaccines—evidence that the immune response to viruses can still operate correctly even with Il-17 inhibition (13,14). There is little difference in general infection rates between drug and placebo groups in IL-17 and IL-23 antagonist studies (15). In the Psoriasis Longitudinal Assessment and Registry (PSOLAR), rates of serious infection were lower for ustekinumab than for psoriasis patients not on a biologic (16,17). For herpes zoster, in particular, rates were slightly higher, but there were few cases, and differences were not statistically significant (18).

Skin disease may naturally be neglected in the face of life-threatening COVID-19 pneumonia. While some dermatologists are already advising their patients on biologics to discontinue temporarily, we believe this may be premature considering the available evidence. Regardless, dermatologists can expect to see an increased rate of psoriasis flares over the next few months as patients forgo their treatment with or without their physician recommendation. Stopping biologics temporarily may lead to development of anti-drug antibodies—something we may need to monitor.

We may not need to discontinue biologic treatment for most patients simply due to the *risk* of infection. COVID-19 has a high risk of mortality in the older population with cardiovascular and pulmonary co-morbidities (19). The majority of our patients are not in this high-risk group and likely can cautiously continue biologic treatment. For the absolute highest risk patients, the risk-benefit may favor discontinuation on a case-by-case basis.

We ought to make decisions based on evidence, not fear—and while we do not know for sure that biologics do not increase the risk or morbidity of COVID-19 infection, we do not have evidence to recommend preventively discontinuing these effective medications, either. We can closely monitor and advise patients our biologics patients based on their age, co-morbid disease, and specific situation. More importantly, we can recommend, with confidence, what we do know—regular handwashing, standard respiratory hygiene, and being a little more careful to avoid sick contacts, when possible, can make a big difference in reducing infection rates (1,2).

Table 1. Preventing COVID-19 in outpatient clinics (1,2).

Hand washing hygiene: wash hands frequently with soap and water for at least 20 seconds or use an alcohol-based hand sanitizer with at least 60% alcohol
Respiratory precautions: proper use of personal protection equipment
Screen and separate patients with respiratory symptoms in the waiting room
Use telemedicine care when possible
Encourage sick employees to stay home
Plan and review infection control policies ahead of time with all staff

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