Methotrexate Therapy During the COVID-19 Pandemic is not a Reason for Concern

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Objective

- Evaluate whether the use of immunosuppressive agents increases risks for morbidity and mortality in patients infected with COVID-19.
- Evaluate risk for patients continuing and initiating MTX therapy during the COVID-19 pandemic.

Background and Purpose

- The COVID-19 pandemic has created an unprecedented healthcare setting for both physicians and patients, creating a challenging decision-making environment for Dermatologists
- Methotrexate (MTX), a dihydrofolate reductase inhibitor, is a commonly prescribed oral immunosuppressive agent by Dermatologists.
- MTX inherently increases susceptibility to infection secondary to its immunosuppressive properties.
- MTX is not without adverse effects, some of which include hepatotoxicity, nausea, and leukopenia. Of these, the most concerning is increased risk of infection during these times due to fear of exacerbating COVID-19-related pneumonia.
- It remains unknown to what extent SARS-CoV-2 infection impacts chronic inflammatory skin diseases and their treatments.[1]
- It is imperative to evaluate the use of MTX during the COVID-19 pandemic to determine the effect on patient safety and provide perspective on use for Dermatologists.

Methods

- This narrative analysis included manually reviewing PubMed.
- Keywords such as, “methotrexate", "coronavirus”, “COVID-19”, and “SARS-Cov-2” were utilized within the review.

Results

- Literature review demonstrated limited data regarding COVID-19 infection and methotrexate use specifically. Thus, other studies were utilized to assess safety of MTX.
- The 2002 SARS outbreak and MERs demonstrated no deaths in patients receiving immunosuppressive agents, at any age.[1]
- A study conducted on rheumatoid arthritis patients taking MTX looked at respiratory infections requiring hospital admission. No difference was shown in mortality rates between patients taking MTX and patients not taking MTX. The study recommended continuing MTX in patients with hospitalized with mild infections[3]
- Within the pediatric population, a study was conducted which derived recommendations for MTX use in patients with covid exposure. (Table 1)

Table 1

COVID-19 Status	Recommendation
No symptoms	76% recommend continuation of MTX
Test + for COVID-19	89% recommend temporary discontinuation of MTX
Close exposure risk, but not tested	76% recommend temporary discontinuation of MTX

Discussion

There is insufficient data on methotrexate use during the COVID-19 pandemic. Studies from previous outbreaks of SARS and MERS can be used to make case-by-case decisions on patients, with use of expert opinions.

In addition, there is limited literature, discussing strong rationale for use of high dose methotrexate for the treatment of SARS-CoV-2 associated inflammatory syndromes.[2]

If starting a new patient on MTX during this time, it is important to evaluate the individual patient’s risk-benefit profile thoroughly. Severity of signs and symptoms of COVID-19 should be assessed in all patients (Table 2).

All patients should take precautions in minimizing exposure with hand-washing, social distancing, and mask utilization.

Table 2

Most common symptoms
Fever
Dry Cough
Fatigue
Sputum production
Shortness of breath
Loss of tase and smell
Sore throat
Headache
Myalgia
Chills
Nausea or vomiting

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