

Short Report

To Inject or Not to Inject? Corticosteroid Injections in the Face of the COVID-19 Pandemic

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Abstract

Corticosteroid injections (CSI), a recognized modality of treatment in patients with musculoskeletal conditions, is under controversy post WHO advice against the therapeutic use of systemic corticosteroids for COVID-19 patients. In our opinion unless CSI is proven harmful, withholding such treatment is not justified. An online survey amongst a significant number of rheumatologists in Pakistan was conducted to assess local practices and outcomes. 55 responses were recorded with 73.6% (n39) being from the province of Punjab. More than two thirds 69.8% (n37) of participants had administered a CSI during the pandemic, and only one patient developed COVID-19. It appears that most rheumatologists in Pakistan have not changed their practice with regards to the use of CSI. Following the recent recommendation of the use of dexamethasone for the treatment of COVID-19 we suggest the guidelines for CSI be revisited.

Keywords: Corticosteroid Injection, COVID-19, Inflammatory Arthritis, Musculoskeletal Conditions

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Introduction

It is well recognised globally that the COVID-19 pandemic, due to the novel SARS-CoV-2 virus, is a health crisis of unprecedented magnitude and impact. It has been, and is, an ongoing learning experience for all in the medical field, including rheumatologists.

The use of CSI is generally a simple, relatively safe routine procedure in rheumatology practice for immediate and sometimes, sustained relief of patients with some musculoskeletal conditions. However, in recent times its use has become controversial. Guidelines on the use of CSI have been published by the World Health Organisation (WHO)¹ as well many professional bodies of independent health disciplines including Rheumatology, Orthopaedics,² Sports Physicians and Physiotherapists.³ These guidelines generally have been interpreted as discouraging the administration of CSI, with the background WHO guidance for patients with COVID-19 to completely avoid systemic corticosteroids.

The systemic absorption and resultant side effects of CSI are not well understood, and it has been hypothe-

sized that the systemic side effects of corticosteroids can also occur with CSI. Current evidence suggests there is significant individual variability in the amount of systemic absorption and clinical effects of locally injected corticosteroids.⁴ The argument opposing the use of corticosteroids is that in the scenario of COVID-19 infection, its long quarantine period (average 14 days), poses a risk to asymptomatic patients carrying the virus. In this situation a CSI may potentially place these asymptomatic patients at an increased risk of becoming symptomatic. This is even more so in patients falling in a high-risk category. There is also an added risk of exposing patients for an elective procedure in a hospital setting, thus further increasing the risk of contracting COVID-19 infection.⁵

WHO reports that there is evidence that the use of corticosteroids is linked to increased mortality and delayed viral clearance, as previously seen in those affected by Middle East Respiratory Syndrome coronavirus (MERS-CoV).⁶ However, retrospective reviews of data on previous coronavirus outbreaks, such as severe acute respiratory syndrome coronavirus

(SARS-CoV) and MERS-CoV, found no fatalities reported in patients at any age who were on immunosuppressive treatments.⁷

There is also emerging data to suggest that corticosteroids could theoretically mitigate the impact of COVID-19, particularly during the late phases of infection characterized by hyper-inflammation and cytokine storm.⁸ Case series conducted in young patients living in epidemic areas of Italy with a history of solid organ transplantation, as well as those undergoing cancer chemotherapy, showed that despite being administered glucocorticoids they did not develop severe COVID-19 complications.⁷ Furthermore, the findings of 'The RECOVERY trial',⁹ a randomized controlled trial indicates that in patients with COVID-19 pneumonia, dexamethasone improves 28-day mortality compared to placebo in patients requiring Invasive Mechanical Ventilation (NNT = 8.5) and those patients requiring oxygen therapy (NNT = 29). The American College of Rheumatology,¹⁰ in its recent guidelines, while acknowledging the controversies in the available evidence, endorsed continued standard of care glucocorticoid administration, the avoidance of abrupt treatment withdrawal and the use of the lowest effective doses to control underlying rheumatic disease manifestations. The panel further endorsed the use of low-dose glucocorticoids when clinically indicated and acknowledged that higher doses in the context of severe vital organ-threatening disease may be necessary even following SARS-CoV-2 exposure.

Corticosteroids play an important role across a range of conditions. In musculoskeletal disease management, CSI can be used to reduce inflammatory joint disease, thus easing pain, increasing mobility, and providing improved quality of life. For some musculoskeletal conditions, especially in the acute situation, there are no effective alternative management options aside from CSI. To offer early surgical treatment is not always best practice and it is unlikely that this will be offered to patients in the near future given how the pandemic has impacted the surgical healthcare system. Given the lack of evidence of their harm in patients with COVID-19, and the lack of evidence that such treatment may lead to a patient contracting COVID-19, suspending corticosteroids, including injections, in our opinion would potentially cause more harm to patients, resulting in significant morbidity and leaving patients' conditions and symptoms unmanaged.

In the absence of clear guidelines and conflicting evidence, we conducted a survey amongst rheumatologists in Pakistan to understand specialists' practices of CSI during the COVID-19 pandemic.

Methods and Results

This cross-sectional online survey was conducted by Arthritis Care Foundation (ACF), Pakistan, following the principles of the Declaration of Helsinki. An online questionnaire was developed and distributed to practicing rheumatologists in Pakistan who are approximately 70 in number. The survey comprised a total of eleven questions. The first six ascertained the primary outcome, the next two focused on outcomes of injections, and the last three alluded to the physicians' own knowledge and demographics. The primary objective was to determine if there was a change to their clinical practice of administering CSI during the COVID-19 pandemic; the secondary objective was to determine if there were any adverse outcomes after undertaking CSI.

A total of 55 specialists completed the survey: 73.6% (n39) were from the province of Punjab, followed by the capital Islamabad 9.4% (n5), Khyber Pakhtunkhwa 5.7 % (n3), Sindh 3.8 % (n2), and Gilgit-Baltistan 1.9%(n1). The majority 92.5% (49) were not aware of any local or national guidelines advising against the use of CSI, and more than half (58.5%) (n32) had no concerns about administering CSI to patients in the current COVID-19 pandemic.

More than two thirds (69.8%) (n37) of the participants had administered an intra-articular (IA) or soft tissue (IM) or perineural steroid injections during the COVID-19 pandemic. However, a quarter (24.1%) (n13) were against the administration of steroid injections during the pandemic. No change in the specialists' clinical practice with regards to CSI was reported by (38.9%) (n21).

Table 1: *Change to Practice of CSI by Rheumatologist During the COVID-19 Pandemic in Pakistan*

Variable assessed during the COVID-19 pandemic	N = number	%
Change in practice of administering steroid injections	20	37.37
Change in practice with regards to body sites	7	12.96
Change in practice with regards to patient groups	16	29.63
Change in practice of steroid dose injected	5	9.62

[n= number of participants, %= percentage of the participants]

The change in practice of CSI by rheumatologists during the COVID-19 pandemic in Pakistan is demonstrated in table 1 and groups of patients in whom they have avoided administering CSI is shown in Figure 1.

The outcome of CSI was beneficial with only one

(1.9%) developing COVID-19 requiring hospital care, within 2 weeks of being administered a steroid injection.

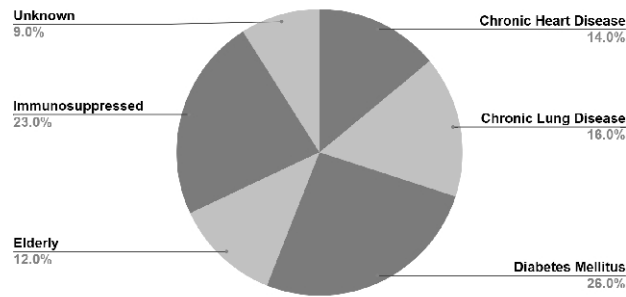


Figure 1: *Groups of Patients in Whom Rheumatologists have Avoided Administering CSI During the COVID-19 Pandemic in Pakistan*

Discussion

In-keeping with the survey results, we believe that in most cases in Pakistan there is no justifiable reason to discontinue the administration of CSI in patients requiring them for symptomatic disease control. In many cases the potential risk of suspending the use of a CSI is unfounded and may be outweighed by the benefit of improved quality of life.

Other countries are reassessing the appropriateness of the guidelines surrounding the use of corticosteroids in SARS-CoV-2. The Chinese Thoracic Society have issued an expert consensus statement to adopt the basic principles of a risk benefit analysis before using corticosteroids; they have steered away from an immediate decision to suspend, or to not consider the use of corticosteroids.

Conclusion

We recommend the continuation of the use of CSI in those requiring it and a revision of current guidelines during the COVID-19 pandemic based on the latest evidence. We believe a shared risk-benefit assessment consultation should be held with the patient and a mutual decision then be reached upon a common treatment approach.

Conflict of Interest

None

Funding Source

None

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