



Steroid injections during the Covid-19 pandemic

General information

Corticosteroid use is common in pain procedures, with the aim of easing pain, increasing mobility and improving quality of life. Their duration of effect is variable but they can provide several months of benefit.

Oral corticosteroids have been associated with an increased risk of mortality in patients with influenza and delayed viral clearance in patients with Middle East Respiratory Syndrome coronavirus (MERS-CoV) infection. Although steroids have been widely used in management of severe acute respiratory syndrome (SARS), no significant evidence for benefit has been shown, however persuasive evidence of short- and long-term harm has been demonstrated. A recent study from China of patients with the novel coronavirus (SARS-CoV-2) reports that corticosteroids have no effect on mortality, but that they do delay viral clearance.

Injected corticosteroids have been shown to cause a variable degree of adrenal suppression for at least some weeks. The immunological impact of steroids given this way in patients with Covid-19 is unknown. Due to the long incubation period of SARS-CoV-2 (up to 14 days), there is also a risk that asymptomatic patients who may be incubating the virus, could receive injected steroid treatment, potentially putting them at increased risk of an adverse outcome from the virus should it develop following the treatment.

Immunosuppressant effects of injectable corticosteroids

Corticosteroids are known to cause a transient reduction in immunity and suppress the hypothalamic-pituitary-adrenal axis.

The most commonly used steroids for MSK injections locally are methylprednisolone acetate (Depomedrone®) and triamcinolone acetonide (Kenalog®). Studies suggest that after intra-articular injection, methylprednisolone acetate causes maximum adrenal suppression in a dose-independent manner by 48-hours post-injection (even lower doses of 40mg induce full adrenal axis suppression). The drug passes into the systemic circulation over the following 7-days during which time it causes hypothalamic-pituitary-adrenal axis suppression after which time systemic cortisol levels begin to recover. Similarly, data for Kenalog® intramuscular injections suggests that adrenal suppression occurs within 48 hours of injection and can persist for 30-40 days.

The non-particulate steroids dexamethasone and betamethasone are predominantly used for perineural injections around the spine, so relevant for image-guided secondary care injections, but not for primary care/outpatient landmark injections. They also suppress the hypopituitary-adrenal axis, but effects do not seem to persist as long as the particulate steroids, as evidenced by a return to normal blood cortisol levels when measured at 3-weeks post epidural injection.

Clinical considerations prior to undertaking/referring for a steroid injection during the Covid-19 pandemic

As with all procedures a risk benefit balance must be reached in discussion with the patient. Each case is unique and no guidance will cover all eventualities.



When assessing patients for steroid injections in general the severity of underlying disease, and comorbidities must be balanced against the potential benefit. This is usual practice. Specifically, during the Covid-19 pandemic, further consideration is needed with regards to the potential risk of the patient developing more severe disease should they be exposed to the SARS-CoV-2 before or after an injection which may cause a degree of immunosuppression. Patients should be fully aware of the potential increased risk and be engaged in the clinical decision making. Whenever possible, vulnerable patients in high-risk groups (e.g. older patients and those with comorbidities) and those identified as actively shielding, should avoid hospital or clinic appointments. However, there may be occasions where a steroid injection is appropriate and justifiable for the patient when weighed against the alternatives.

Risk stratification tools may be helpful to inform the clinical discussion and decision making process. An example is QxMD's Covid-19 prognostic tool, available at https://qxmd.com/calculate/calculator_731/covid-19-prognostic-tool (however, this does not adjust for ethnicity or BMI, which we now know are important risk factors for severe disease and mortality).

Decision to undertake or refer for a steroid injection, including onward referral to another clinician/department

A case-by-case decision should be made for each patient by the clinician in discussion with the patient, taking into account individual risk stratification and benefits to the patient as above. In the case of referral for image-guided injections, the radiology department will not hold responsibility for this clinical assessment but will assume that this due diligence has been conducted by the referrer.

Recommended process for peri-procedural management

1. Clinical discussion and risk assessment, including any recent symptoms suggestive of Covid-19.
2. Consent form (appendix 1) signed by the patient - essential.
3. The patient should be advised to optimise social distancing measures for 14 days pre-procedure. This is especially important at times of high prevalence of community virus transmission, and may in some circumstances include the advice for the patient to actively shield.
4. On the day of the procedure the patient should follow the clinic's current advice on when and how to enter the clinic premises.
5. The patient should be screened for new/current symptoms which may be suggestive of Covid-19 (for example, flu like symptoms, fever, dry cough, and/or anosmia) or any known recent exposure to SARS-CoV-2. If any concerns, the procedure should be cancelled.
6. Injection performed adhering to local infection control policies, including cleaning and use of personal protective equipment (PPE) as required.
7. The patient should be advised to optimise social distancing measures post-procedure. The recommended duration for this will depend on a variety of factors, including the patient's own risk factors as identified in the pre-procedure risk assessment, the individual's risk of exposure to SARS-CoV-2 post-procedure and the prevalence of community virus transmission at the time. Again, in some circumstances it may be appropriate to advise the patient to shield for a prolonged period following the procedure.



References:

1. Faculty of Pain Medicine of the RCoA (March 2020): FPM response to concern related to the safety of steroids injected as part of pain procedures during the current COVID-19 virus pandemic. Available at URL: <https://fpm.ac.uk/sites/fpm/files/documents/2020-03/FPM-COVID-19-Steroid-Statement-2020-v2.pdf>
2. British Society for Rheumatology, Chartered Society of Physiotherapy, British Association of Spine Surgeons and British Orthopaedic Association (March 2020): Corticosteroid use for musculoskeletal and rheumatic conditions during COVID-19 pandemic (March 2020). Available at URL: <https://www.boa.ac.uk/uploads/assets/30a67bae-1e3a-4b76-bf97b7f86600230b/Corticosteroid-use-for-musculoskeletal-and-rheumatic-conditions-during-COVID-19-Pandemic-V1.pdf>
3. The British Society of Skeletal Radiologists (March 2020). Recommendations of the BSSR: The safety of corticosteroid injections during the COVID-19 global pandemic Available at URL: https://www.bssr.org.uk/static/uploads/forum/Musculoskeletal_Radiology_during_the_COVID-19_Global_Pandemic.pdf
4. British Society for Rheumatology (March 2020). Covid-19 – guidance for rheumatologists. Available at URL: <https://www.rheumatology.org.uk/news-policy/details/Covid19-Coronavirus-update-members>



Appendix 1:

Patient questionnaire and consent form for steroid injections during the Covid-19 pandemic period

1. Has your clinician or the one making this referral discussed the risks of having a steroid injection during the Covid-19 pandemic? **Yes / No**
2. Are you aware that this steroid injection may temporarily suppress your immune system? **Yes / No**
3. Are you aware that following this injection, if you contract Covid-19, that the steroid could potentially cause your illness to be more severe? **Yes / No**
4. Are you aware that there is a lack of evidence as to what are the exact risks of having a steroid injection during the Covid-19 pandemic? **Yes / No**
5. Do you have any recent or current symptoms suggestive of Covid-19, such as a dry cough, raised temperature, flu-like symptoms or loss of sense of smell? **Yes/No**
6. Have you followed the advice you were given about social distancing before the injection and understand the advice about social distancing after the injection?
Yes/No
7. Given the information and my answers above, I wish to proceed with the injection:
Yes / No

Patient name: _____

Patient signature: _____

Date: _____

I confirm that the appropriate discussion has been had and that I have reviewed the patient's answers:

Clinician name and signature: _____