Management of patients with musculoskeletal and rheumatic conditions who:

- are on corticosteroids
- require initiation of oral/IV corticosteroids
- require a corticosteroid injection

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This supersedes the specialist guidance “Management of Patients with Musculoskeletal and Rheumatic Conditions on Corticosteroids” published as part of the NHS England and Improvement phase 1 response to the coronavirus pandemic. It relates to musculoskeletal (MSK) service provision across primary, community and secondary care and is applicable to adults and children. The use of steroid medication is one of the management options for a range of musculoskeletal conditions and in particular rheumatic conditions, and this guidance aims to assist decisions on the use of such medication during the pandemic.

It is supported by the British Society for Rheumatology, British Association of Orthopaedics, British Association of Spinal Surgeons, Royal College of General Practitioners, British Society of Interventional Radiology, Faculty of Pain Medicine, British Pain Society and Chartered Society of Physiotherapy

It reflects the new potential problems that may be associated with corticosteroid use in the setting of COVID-19 while recognising the important role that appropriate and considered use of corticosteroids may have to treat patients where alternative treatments are inappropriate or ineffective.

Summary

Steroids – oral and injected – can be an important and effective treatment for some MSK conditions, particularly rheumatic conditions, some types of arthritis and joint pain. Sometimes these can be lifesaving. Stopping steroids suddenly can be dangerous, and patients should only do so under clinical supervision.

There is concern that steroids can increase the risk from the novel coronavirus (COVID-19). Therefore, healthcare professionals should always consider alternatives to steroids where possible. If steroids are needed, the lowest possible dose should be used for the shortest possible time. If people are already taking steroids, consideration should be given on whether the dose can be safely reduced. Only give steroid injections for severe symptoms, and where there are no other options. Corticosteroids (either oral or parenteral) should only be initiated following careful counselling of patients and shared decision making.

Table 1 Summary of key points

Don’t stop current steroids but taper their dose if possible and if it is clinically safe to do so, in line with usual practice.
Think before starting steroids in the current pandemic.
Use the lowest possible dose of oral steroids for the shortest period of time.
Starting oral prednisolone at more than 5mg per day for more than a month could move a patient into the shielding group.
Starting oral prednisolone at more than 20mg per day (or greater than 0.5mg/kg/day for children) for more than a month will move a patient into the shielding group.
Only give a steroid injection if a patient has significant disease activity and/or intrusive and persisting symptoms, and there are no appropriate alternatives.

Background

The current WHO guidance[1] for the management of severe acute respiratory infection in patients with coronavirus is to avoid giving systemic corticosteroids. We therefore need to be cautious when using steroids for other indications during the pandemic.

Steroids 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 were widely used in the management of severe acute respiratory syndrome (SARS), there was no good evidence for benefit but there was persuasive evidence of adverse short- and long-term harm.[2] A recent study of patients with coronavirus from China reports that corticosteroids have no effect on mortality but do delay viral clearance.[3]

Long-acting, usually insoluble steroid formulations are frequently used as intra-articular or intramuscular injections in rheumatic diseases. To put this into context, triamcinolone acetonide 40mg is equivalent to 10 times normal daily adult physiological steroid production. The potential impact of any theoretical immunological suppression that may be associated with exogenous corticosteroid treatments in an asymptomatic patient incubating coronavirus at the time or in future is currently unknown. Therefore, in clinical practice processes to ensure an informed shared decision making with the patient should be in place. It is important to discuss the potential risks with patients in whom corticosteroid injection is being considered, and it is sensible to minimize the dose used and to avoid simultaneous injections to multiple sites where possible.

Although children and young adults are thought to be at lower risk from coronavirus, this guidance also applies to them as well as adults.

Steroid route and indications

Oral prednisolone

Patients on long-term steroids should not stop their treatment.

If starting steroids in **adults** during the pandemic, use the lowest possible dose and taper corticosteroid therapy as fast as possible in the clinical context, for example:

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[1] World Health Organization *Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected*, 2020. https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf

[2] Russell CD, Millar JE, Baillie JK. Clinical evidence does not support corticosteroid treatment for 2019-nCoV lung injury. *Lancet* 2020; 395:473.

[3] Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; 395(10223):497-506.

- maximum 15mg daily or equivalent for new polyarthritis or polymyalgia rheumatica
- maximum 40mg (0.75mg/kg) daily for giant cell arteritis (GCA)
- maximum 60mg (1mg/kg) daily for GCA with ocular involvement, large vessel involvement or vasculitis
- maximum 30mg daily for 1 week for gout or pseudogout flares where oral NSAIDs or colchicine are contraindicated, and intra-articular joint injection is not possible.
- higher doses of oral prednisolone should only be used on specialist advice
- high dose steroids may be required to manage an acute flare of severe autoimmune connective tissue disease or vasculitis and specialist advice should be sought.

Steroid use in **paediatric** disease should only be initiated/dose adjusted by the paediatric specialist service.

Intramuscular injections

Only use to control a significant disease flare that is compromising a patient's ability to function, and consider using lower doses (maximum recommended 120mg methylprednisolone or equivalent).

Intra-articular injections (IAI) for inflammation

Only use for inflammatory joints where there is active synovitis ± effusion, and consider using lowest clinically effective doses.

For children and young people with juvenile idiopathic arthritis, if few or only one joint is affected, IAI may be used, and is likely to be safer than oral steroids. If multiple joints are affected a DMARD or escalation of treatment should be considered.

In young children intra articular injections may need to be administered under a general anaesthetic, which makes these 'aerosol generating procedures' for COVID-19 purposes. In such cases, careful consideration would need to be given as to whether this is the most appropriate treatment option at the current time, taking into account factors including: (1) the additional COVID-19 risks associated with this aerosol generating procedure; (2) any practical issues for the child/family in receiving such injections at this time (e.g. usually a procedure requiring a general anaesthetic will occur in a 'green' or COVID-free pathway and under current guidance this would require 14-days isolation prior to the injection); and (3) whether there are circumstances in the local healthcare setting meaning patients cannot secure suitably rapid access to the procedure. Alternatively, treating clinicians could consider injection with local anaesthetic, or sedation, or a short course of systemic steroids as other options.

Intra-articular, peri-articular and soft tissue injections for musculoskeletal pain

For example, osteoarthritis, shoulder pain, lateral hip pain, carpal tunnel syndrome, trigger digit and de Quervain's.

Recommend simple analgesia, activity modification, splinting where appropriate and exercise as first line and in most patients.

Only consider a steroid injection if a patient has high levels of pain and disability, has failed first-line measures and continuation of those symptoms will have a significant negative effect on their health and wellbeing and after obtaining informed consent.

Consider carefully the dose of steroid used, choosing the minimum appropriate dose. Where possible avoid simultaneous multiple site injections.

Patients should be given guidance about activity modification and exercise therapy following an injection.

Injections for spinal radiculopathy

All appropriate and available non-invasive treatments should be explored and discussed with the patients, before injection treatments are considered

Injections can be offered for severe radiculopathy and as an alternative to surgery, they should be assessed on an individual basis and a collaborative approach taken with other clinicians to guide prioritisation. Patients must be engaged with the process, fully aware of the risks and be able to give informed consent.

In such cases an epidural or targeted nerve root block can be performed with local anaesthetic only or with the lowest possible dose of steroid to be effective.

Patients should be given guidance about activity modification and exercise therapy following an injection.

Intravenous methyl prednisolone

IV methyl prednisolone should be reserved for those with clinically active disease and given on specialist advice only.

Shielding and steroids: implications

Starting a course of oral prednisolone to last more than a month **may** put someone into the shielding group and the implications of this should be discussed with the patient.

Starting oral prednisolone at more than 20mg per day in an adult or greater than 0.5mg/kg in a child for more than a month **will** move a patient into the shielding group.

A one-off steroid injection for local action will **not** put someone into the shielding group.

A one- off intramuscular steroid injection will **not** put someone into the shielding group.

Should injected corticosteroids still be used during the current coronavirus pandemic?

As per usual practice, individuals with active infections must not be injected with steroids.

Steroid injections are commonly used in MSK management to control inflammatory joint disease, ease pain, increase mobility and improve quality of life. Their duration of effect is variable but they can provide benefit for several months and in certain conditions (such as trigger digit) may provide long-term symptom resolution. In some patients, the use of an injection can avoid the need for surgery or delay it for a substantial period, thereby reducing the risks of patients undergoing procedures at this time. However, during the coronavirus pandemic clinicians need to give extra consideration as to whether the benefits outweigh the risks. The incubation period for coronavirus can be long (up to 14 days) with an estimated median time of 5.1 days. This means that giving a steroid injection to an asymptomatic patient who is carrying the virus could potentially put them at increased risk of an adverse outcome from the virus. This potential risk therefore needs particular consideration in more clinically vulnerable patient groups, for example patients over the age of 70, those with diabetes mellitus, ischaemic heart disease, chronic respiratory disease and hypertension.[4] Patients in the 'clinically extremely vulnerable' group for COVID-19 will be shielding, and similarly great care will need to be given to assessing and discussing the risks both of any immunosuppression resulting from the injection and also attending a clinical setting where higher levels of COVID-19 ma be present; the risks for these patients may outweigh the benefits so clinicians need to exercise great caution and explain the risks to the patients.[5]

To summarise:

An individual risk analysis should take place on a case-by-case basis.

Delivery of care should follow relevant national guidance[6] and local delivery plans.

If you are a non-prescribing clinician injecting under a patient group directive, then you must follow local guidelines.

[4] NHS defined groups at 'moderate' and 'high' risk: https://www.nhs.uk/conditions/coronavirus-covid-19/people-at-higher-risk/whos-at-higher-risk-from-coronavirus/

[5] Shielding guidance: https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19

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If you do decide to undertake injection therapy, you **must**:

1. Adhere strictly to your local infection control policies, including cleaning and use of personal protective equipment (PPE) as required.
2. Adhere to local policies on screening, testing etc. for patients to reduce the risk of COVID infection at the time of the injection.
3. Review if the procedure is still clinically indicated if patient has been on a waiting list for some time, ensure the benefit outweighs the risk.
4. Consider if you can reduce the maximum dose of the steroid or choose an alternative medicine to minimize the systemic effects of corticosteroid (e.g. injecting bilateral joints at separate times)
5. Ensure patients are fully aware of the potential increased risk and the lack of clear evidence related to risk during the coronavirus pandemic. They must be engaged in decision-making.
6. Advise all patients to adhere to regular public health advice, e.g. regarding hand hygiene and social distancing, to reduce risk of COVID infection.
7. Obtain and document informed consent to proceed with injection therapy.

[6] https://www.england.nhs.uk/coronavirus/publication/operating-framework-for-urgent-and-planned-services-within-hospitals/.