Managing patients on long term steroids (including high dose inhaled steroids) or who have receiving more than four short oral courses per year in patients who are unwell.

Patients with primary adrenal suppression, e.g. Addison's disease, pituitary problem including secondary adrenal failure and patients with congenital adrenal hyperplasia, are at a particularly high risk of adrenal crisis when severely ill and should have had medicines and training for 'sick day rules'. For these patients, they should follow 'sick day rules' and efforts should be made to contact the patient's specialists for emergency advice. Also see: https://www.addisonsdisease.org.uk/newly-diagnosed-sick-day-rules

This is advice for patients with secondary adrenal suppression. For additional advice see: CKS: Corticosteroids – oral. Most of these patients will be under the care of a specialist, and although the services may be reduced, they will mostly be able to provide advice and guidance if required.

Patients on long term steroids (longer than 3 weeks), or frequent intermittent steroids (4 times a year or more), will have a depressed adrenal function which is less able to respond to the increased cortisol requirement during periods of stress (e.g. surgery, severe intercurrent illness).

When managing patients who are presenting unwell, and who are on long term steroids:

- Do not stop steroids
- In the case of prolonged vomiting and diarrhoea where the normal steroids are not tolerated, patients may need IV or IM hydrocortisone supplementation
- The patient may deteriorate and need to be escalated more rapidly due to immune suppression
- Monitor for symptoms for adrenal suppression and potentially increase doses as described below

Patients may become very unwell due to rapid reduction in corticosteroid dose (e.g. nausea, vomiting), **infection**, trauma, and surgery. These stresses require raised cortisol levels which patients with severe adrenal suppression may not produce.

Severe infection has been described as that requiring bedrest or antibiotics

The presenting symptoms of adrenal insufficiency are non-specific and include:

Fatigue, anorexia and weight loss (and in children, faltering growth), abdominal pain, nausea, and vomiting, headache, joint pains, dizziness, fever.

If no suspicion of COVID-19:

- On doses of equivalent of prednisolone 5mg per day or less – no additional action required
- On doses higher than prednisolone 5mg per day –in severe infection, consider doubling the steroid dose for 7 days
- Monitor for symptoms of adrenal insufficiency

If suspicion of COVID-19:

- Patients on long term steroids are more likely to deteriorate if infected with COVID-19 and therefore the threshold for urgent referral to secondary care needs to be lower

- Evidence does not support the use of steroids for the treatment of COVID-19 lung injury, dose increases should only be made for the purpose of preventing adrenal insufficiency
- Symptoms of adrenal insufficiency are similar to those of COVID-19. In severe illness doses should be doubled for 7 days or until better.

Which patients:

Consider all patients who have, or should have been issued a steroid card

It is unlikely that patients on 5mg Prednisolone (or equivalent) per day or less will develop symptoms of adrenal insufficiency unless they have had intermittent higher doses, or if used in combination with other steroids. MDCalc has a Steroid Conversion Calculator: https://www.mdcalc.com/steroid-conversion-calculator. Their steroid doses should not be stopped, however a dose increase should not be required.

Patients on doses greater than 5mg prednisolone or equivalent, will have adrenal suppression. The higher the dose and duration of treatment, the more likely the patient will have severe suppression.

Careful consideration is required for patients on more than one steroid, for example inhaled steroids, and large area topical administration. Also consider those patients with frequent dose escalations (more than 4 intermittent high dose oral steroid treatments per year)

Inhaled steroids at the highest doses may also cause adrenal suppression, and often patients on these very high doses may also have intermittent oral doses: See link.

Useful resources/ Patient information:

Patient information: Versus Arthritis: COVID-19 advice for people taking steroids: https://www.versusarthritis.org/covid-19-updates/covid-19-advice-for-people-taking-steroids/

High Dose Inhaled Corticosteroid Safety Card : https://surreyccg.res-systems.net/PAD//Content/Documents/2/NHSE%20High%20Dose%20ICS%20Safety%20Card%20NEW%20Guidance%20Notes%20-%20FINAL.pdf

British Society of gastroenterology, latest advice on COVID-19 for patients: https://www.bsg.org.uk/people/patients/

Society for endocrinology: https://www.endocrinology.org/media/3585/sfe-covid-19-advice-statement-for-adrenal_pituitary-insufficient-patients-2020-v2-updated.docx

Lupus UK: https://www.lupusuk.org.uk/coronavirus/

British thoracic society: https://www.brit-thoracic.org.uk/about-us/covid-19-information-for-the-respiratory-community/

References:

BNF, accessed on-line, April 2020
https://bnf.nice.org.uk/drug/prednisolone.html#patientAndCarerAdvice

Clinical Knowledge Summaries: Corticosteroids- Oral:, accessed on-line, March 2020,
https://cks.nice.org.uk/corticosteroids-oral#!topicSummary

NHS Wales: When to Issue a Steroid Treatment Card?: , accessed on-line, March 2020,
http://www.wales.nhs.uk/sites3/Documents/814/WhenToIssueASteroidCardABUHBguidanceFINAL.pdf

Shropshire CCG: When to issue a Steroid Treatment Card – FACTSHEET , accessed on-line, March 2020, https://www.shropshireccg.nhs.uk/media/1344/steroid-card-advice-sccg.pdf

Perioperative "stress dose" of corticosteroid: Pharmacological and clinical perspective, J Anaesthesiol Clin Pharmacol. 2019 Apr-Jun; 35(2): 147–152,
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6598572/

Corticosteroid supplementation for adrenal insufficiency: JAMA January 9,2002-Vol 287, N2 @ 2002 American Medical Association:
http://hormonebalance.org/images/documents/Corticosteroid%20Supplementation%20AI%20Jama%2002.pdf

Guidelines for the management of glucocorticoids during the peri-operative period for patients with adrenal insufficiency, Guidelines from the Association of Anaesthetists, the Royal College of Physicians and the Society for Endocrinology UK: First published:03 February 2020 https://onlinelibrary.wiley.com/doi/full/10.1111/anae.14963

COVID-19 rapid guideline: rheumatological autoimmune, inflammatory and metabolic bone disorders, NICE guideline [NG167]Published date: 03 April 2020:
https://www.nice.org.uk/guidance/ng167/resources/covid19-rapid-guideline-rheumatological-autoimmune-inflammatory-and-metabolic-bone-disorders-pdf-66141905788357

Communication from Dr. Rod Hughes, Consultant Rheumatologist, Ashford and St. Peter's Hospital

Clinical evidence does not support corticosteroid treatment for 2019-nCoV lung injury, Lancet, 02, https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30317-2/fulltext

Author: Carina Joanes, April 2020