Joint Guideline for Long-term Glucocorticoid Replacement Therapy in Adults

For Use in:	A&E, Medical Assessment Unit, ITU/HDU Medical and Surgical wards, Theatres
By:	Medical and Surgical staff
For:	Adult patients on long term glucocorticoid therapy
Division responsible for document:	Medical
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If Yes - does the strategy/policy deviate from the recommendations of NICE? If so why?	N/A

This guideline has been approved by the Trust's Clinical Guidelines Assessment Panel as an aid to the diagnosis and management of relevant patients and clinical circumstances. Not every patient or situation fits neatly into a standard guideline scenario and the guideline must be interpreted and applied in practice in the light of prevailing clinical circumstances, the diagnostic and treatment options available and the professional judgement, knowledge and expertise of relevant clinicians. It is advised that the rationale for any departure from relevant guidance should be documented in the patient's case notes.

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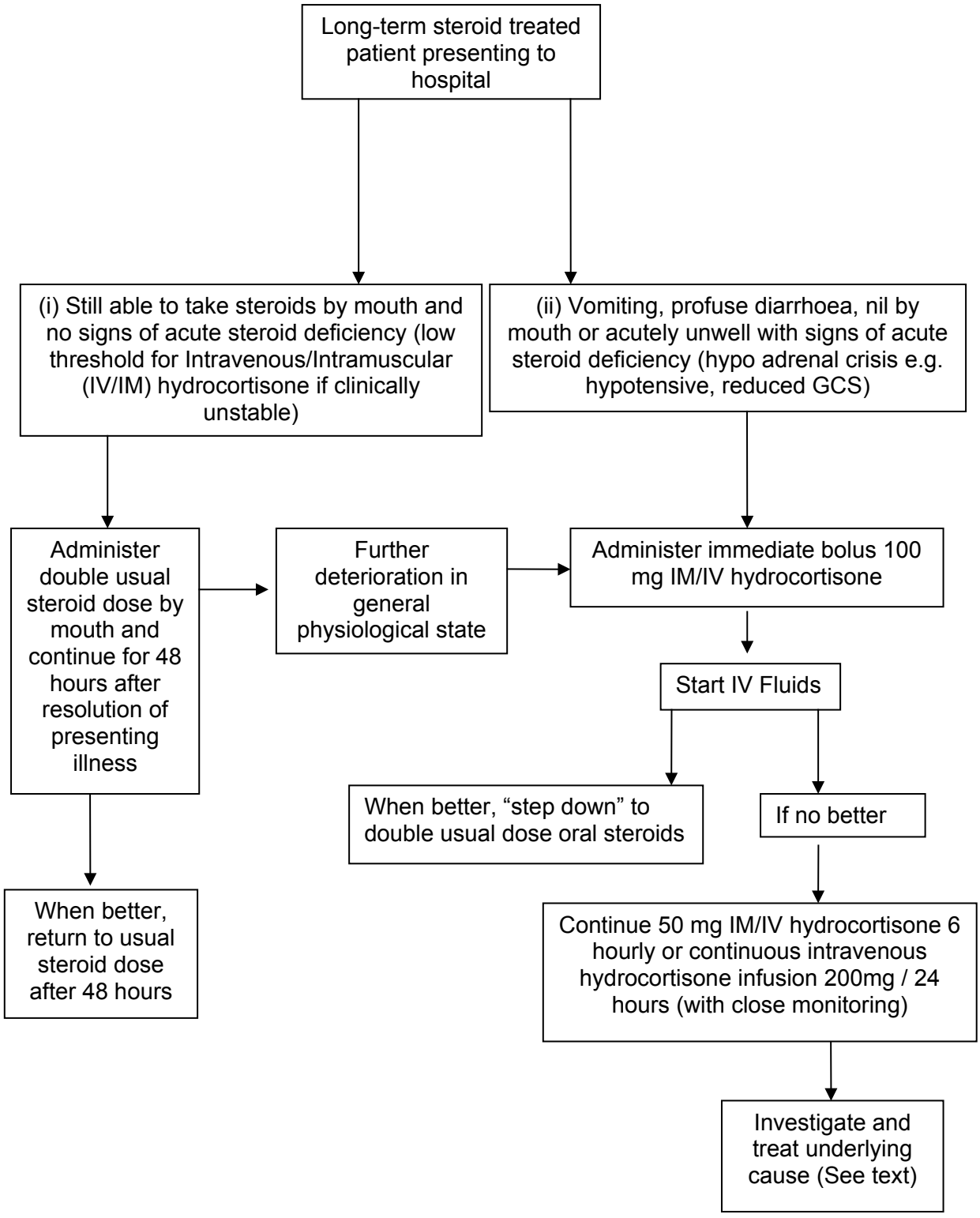
Version and Document Control:

Version Number	Date of Update	Change Description	Author
6	17/03/2020	References updated and doses of Prednisolone and Hydrocortisone section amended.	Dr Rupa Ahluwalia
6.1	16/09/2020	Changes to hyperlinks, no clinical changes.	Dr Rupa Ahluwalia

Quick Reference Guideline



Patients with hypopituitarism, hypoadrenalism, **and any patient on long term glucocorticoid therapy** may develop acute adrenal insufficiency at times of inter current stress or illness. This is a potentially life threatening situation.

Daily doses of prednisolone of 5 mg or greater in adults and 10–15 mg.m^{-2} hydrocortisone equivalent or greater in children may result in hypothalamo–pituitary–adrenal axis suppression if administered for 1 month or more

by oral, inhaled, intranasal, intra-articular or topical routes; this chronic administration

of glucocorticoids is the most common cause of secondary adrenal suppression.

This problem is exacerbated if the precipitating illness is accompanied by vomiting so that oral glucocorticoids cannot be retained or profuse diarrhoea so that they may not be reliably absorbed. It should also be remembered that vomiting is a common symptom of adrenal crisis, so this symptom must be taken seriously.

ALL patients on long-term glucocorticoid therapy (regardless of the indication, including replacement therapy, anti-inflammatory therapy, immunosuppresion and others) require extra steroids to replicate the normal stress response IF:

- **They develop intercurrent illness severe enough to require admission, or if they attend A+E with signs of fever, infection or acute phase response, even if they are well enough to be sent home**

  For patients undergoing surgery, other major procedures or in labour, please see dedicated guideline Trustdocs ID No: 11858 **or** contact the on call endocrinologist for advice.

Please see quick reference guide for details of dose and route of administration.

Management of patients on long term steroids with an intercurrent illness but who are still able to take steroids by mouth and are not displaying signs of acute steroid deficiency:

These patients require a doubling of their usual oral doses of steroids and this must be continued until 48 hours after resolution of the inter-current illness. If their general physiological state deteriorates despite this then they should be escalated to parenteral steroid therapy as outlined below and further advice sought from the duty endocrinologist.

Management of patients on long term steroids who are vomiting, have profuse diarrhoea or who are nil by mouth, <u>including perioperative patients</u>

These patients ideally require IV fluids and an immediate bolus of 100 mg IM hydrocortisone followed by 50mg IM every 6 hours until they can eat and drink normally. If IM injections are not possible e.g. haemophilia, thrombocytopaenia, a single dose of IV hydrocortisone 100 mg can be substituted) followed by a continuous IV infusion hydrocortisone (200mg/24 hours) under close monitoring. **Intermittent IV injections are not ideal** due to the short half life of hydrocortisone).

If a patient on long-term glucocorticoid therapy presents acutely systemically unwell and hypo adrenal crisis is suspected, take the following action:

a. Measure pulse and BP (supine and erect if possible).
b. Establish large bore intravenous access (a peripheral cannula will suffice).
c. Request urgent FBC, U&E's, blood glucose.
d. Administer hydrocortisone 100 mg IM. (If IM injections are not possible give IV hydrocortisone 100 mg followed by a continuous IV infusion of 200 mg/24hours – as above).
e. Start intravenous sodium chloride 0.9% infusion (with no K^+) and infuse 1 litre over 1 - 2 hours (unless very frail, cardiac or renal failure in which case half the infusion rate). Monitor for fluid overload, and reduce rate if necessary. Also continue to monitor blood glucose levels while patients are on high dose steroids.
f. Investigate and treat any underlying illness e.g. blood and urine cultures, CXR and start empiric antibiotics if suspect infection.
g. If after 2 hours the patient is still unwell and / or vomiting check pulse, BP and U&E and continue IV sodium chloride 0.9% at 1 litre 4 hourly and IM hydrocortisone 50 mg 6 hourly (or intravenous hydrocortisone infusion(200mg / 24 hours) with close monitoring).
h. If patient remains unwell after 6 hours please contact the oncall endocrinologist (SpR bleep 1200 during the day, out of hours, SpR or consultant via switchboard).

- All patients who have been advised to take double dose steroids should continue these until 48 hours after the intercurrent illness has passed and then resume taking their usual doses.
- If there is any doubt, please seek advice from the endocrinology team (24/7). During normal working hours the endocrine SpRs can be contacted on DECT 2763 and out of hours the switchboard will put you through to the duty SpR or consultant.
- Before discharge ensure that the patient understands steroid sick day rules (TrustDocs ID: 20, see also Trustdocs ID: 17396). They need a steroid card and or medic alert bracelet with them at all times. Consider endocrine referral.

Objective of Guideline

The safe and consistent management of patients presenting with hypoadrenal crisis using validated, evidence based data to ensure optimal outcomes.

Rationale for the recommendations

Patients on long term glucocorticoid replacement therapy should be managed safely during an admission in order to prevent a hypoadrenal crisis.

Clinical Audit Standards derived from guideline

100% of long term steroid patients admitted to hospital shall have their steroid dose and route of administration adjusted appropriately as per the guidance in this document.

Summary of development and consultation process undertaken before registration and dissemination

The authors listed above on behalf of a guideline development group within the endocrinology directorate, which has agreed the final content, drafted the guideline. During its development it has been circulated for comment to the endocrine consultants, endocrine specialist nurses, consultants in A&E and AMU. This guideline was approved by the clinical governance committee of the endocrine directorate.

Distribution list / dissemination method

Trust Intranet

References / source documents

Emergency Management of Acute Adrenal Insufficiency (Adrenal Crisis) in Adult Patients, Society for Endocrinology Emergency Guidance (published 2016, reviewed 2019 no change)
https://ec.bioscientifica.com/view/journals/ec/5/5/G1.xml

Joint British Diabetes Societies for inpatient care October 2014: Management of hyperglycaemia and steroid therapy
http://www.diabetologists-abcd.org.uk/JBDS/JBDS_IP_Steroids.pdf

Norfolk and Norwich University Hospital “Guidance for patients taking long term steroid replacement therapy in the event of suspected or confirmed COVID-19 infection” TrustDocs ID: 17396

Norfolk and Norwich University Hospital “Guidelines for the management of glucocorticoids during the peri-operative period for patients with adrenal insufficiency” Trustdocs ID No: 11858

Norfolk and Norwich University Hospital “Sick Day Rules” TrustDocs ID: 20

Williams Text Book of Endocrinology. 10th ed. (2003) Editors: Larsen PR, Kronenberg HM, Melmed S, Polonsky KS. Saunders. Philadelphia pp 527
Barts Endocrine Protocols 1995 Editors: Trainer and Besser. Churchill Livingstone

Woodcock, T., Barker, P., Daniel, S., Fletcher, S., Wass, J.A.H., Tomlinson, J.W., Misra, U., Dattani, M., Arlt, W. and Vercueil, A. (2020), Guidelines for the

management of glucocorticoids during the peri-operative period for patients with

adrenal insufficiency. Anaesthesia. doi:
https://doi.org/10.1111/anae.14963