NHS Greater Glasgow and Clyde

CLINICAL GUIDELINE

Prednisolone therapy safe withdrawal in patients with non-endocrine disease

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Guidance for safe withdrawal of prednisolone therapy in patients with non-endocrine disease

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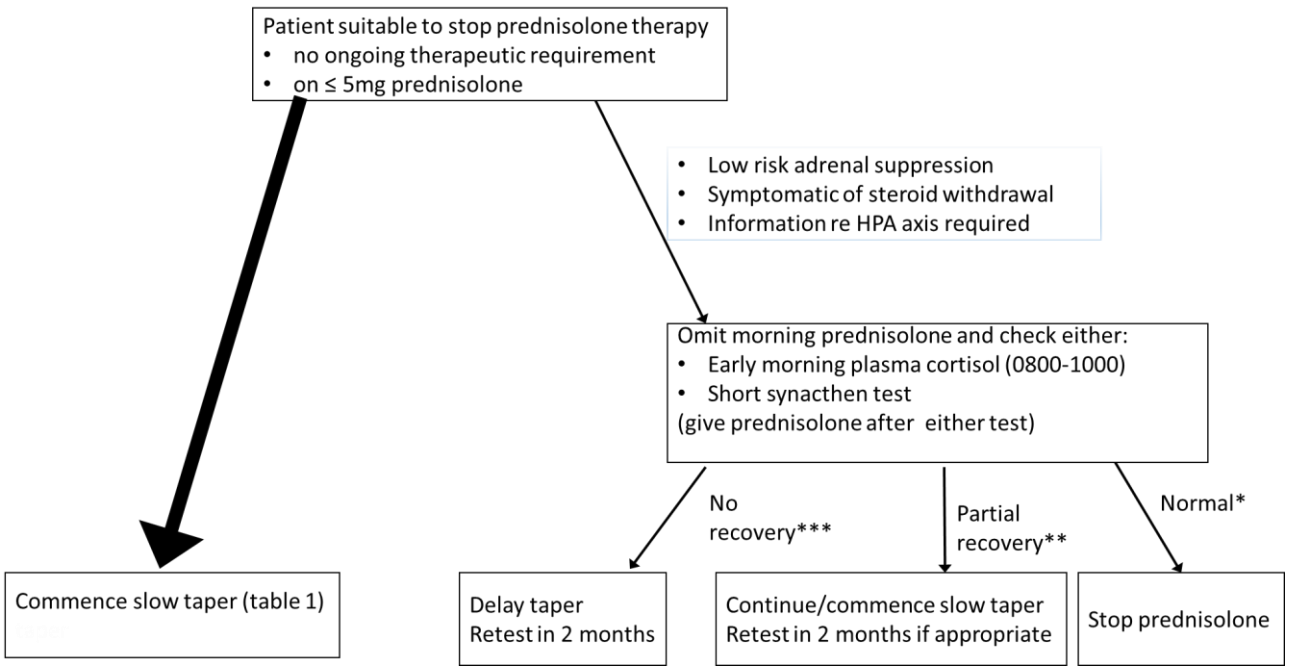

Figure 1. Approach to safe withdrawal of prednisolone therapy

*Normal: early morning cortisol > 300 nmol/L/; post synacthen cortisol > 430nmol/L

**Partial recovery: early morning cortisol 100- 300 nmol/L or post synacthen cortisol 250-430 nmol/L

***No recovery: early morning cortisol <100 nmol/L or post synacthen cortisol < 250 nmol/L

Week	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
0	5	5	5	5	5	5	5
1	5	4	5	4	5	4	5
2	4	4	4	4	4	4	4
3	4	3	4	3	4	3	4
4	3	3	3	3	3	3	3
5	3	3	3	2	3	3	3
6	3	2	3	3	2	3	3
7	3	2	3	2	3	2	3
8	2	3	2	3	2	3	2
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10	2	2	2	3	2	2	2
11	2	2	2	2	2	2	2
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18	1	1	1	1	1	1	1
19	1	1	1	0	1	1	1
20	1	0	1	1	0	1	1
21	1	0	1	0	1	0	1
22	0	1	0	1	0	1	0
23	0	1	0	0	1	0	0
24	0	0	0	1	0	0	0

Table 1. Suggested tapering regimen for steroid dependent patients on 5mg prednisolone

Adapted with kind permission Professor Karim Meeran (Prednisolone withdrawal (impendo.co.uk))

1 Scope

1.1 This guidance applies to (non pregnant) adult patients **who fulfil all 3 criteria** outlined below:

a. Patients who have been treated with long-term (≥ 4 weeks) supraphysiological doses (≥ 5mg prednisolone daily dose) of glucocorticoid for a non-endocrine condition

b. Patients no longer require prednisolone treatment for their non-endocrine condition

c. Patients are now on ≤5mg prednisolone (or equivalent preparation) daily

1.2 This guidance can be read in conjunction with the following protocols and guidelines:

a. Society for Endocrinology Emergency Endocrine Guidance: Acute Adrenal Insufficiency-Adrenal Crisis. (Available at: http://www.endocrinology.org/adrenal-crisis).

b. Beuchlein F, Bancos I, Else T et al. European Society of Endocrinology and Endocrine Society Joint Clinical Guideline: Diagnosis and therapy of glucocorticoid-induced adrenal insufficiency 2024 *European Journal of Endocrinology 190*: G25-G51

1.3 This guidance is relevant to primary care patients as well as those attending relevant out-patient clinics, it is unlikely to be relevant for inpatients.

1.4 This guidance applies to patients treated with oral prednisolone only. For advice on weaning of alternative glucocorticoid preparations, please contact local endocrine department (via switchboard)

2 Do patients require assessment of adrenal function before commencing prednisolone withdrawal?

2.1 Most patients on oral prednisolone do not need assessment of adrenal function

2.2 If patients no longer require oral prednisolone, they can simply commence a gradual taper without testing (Broad arrow in figure 1 and Table 1).

2.3 This can take a prolonged period of time (often 6 months or more) and patients may become symptomatic of steroid withdrawal. However, if followed carefully, the hypothalamic-pituitary axis should recover in almost all individuals and does not require formal assessment.

2.4 It should be noted that, while reducing glucocorticoid dosing, patients should be considered steroid dependent. Therefore, they require education around sick day rules and the need for steroid warning cards. (**Appendix 1/2**)

2.5 For advice please contact relevant endocrine specialist nurses as outlined section 5 or consult Addison's Disease Self-Help Group (addisonsdisease.org.uk)

3 Patient assessment during steroid taper

3.1 We would counsel against routine assessment of plasma cortisol or short synacthen test in patients suitable for slow taper of oral prednisolone therapy

3.2 However, patients will require regular clinical assessment for both flare of underlying disease and/or development of adrenal insufficiency symptoms during glucocorticoid tapering regimen. Symptoms of adrenal insufficiency are often non-specific (fatigue/myalgia/weight loss) and can mimic the underlying initial disease for which they were treated.

3.3 Therefore, consider measuring early morning cortisol or performing a short synacthen test to assess adrenal function **only** in patients in whom there is difficulty in reducing glucocorticoid dose due to perceived symptoms of adrenal insufficiency (for interpretation, see section 4 and Figure 1).

4 Assessment of adrenal function in selected patients

4.1 This can be considered in the following patients:

a. those felt to be at low risk of adrenal insufficiency (eg. use for less than 3-4 weeks and/or on doses <5mg prednisolone or equivalent) and may not require a prolonged taper,

b. those who are about to undergo an acute stress (eg elective surgery) where information about adrenal function is important

c. those who feel they are symptomatic of adrenal insufficiency when reducing their glucocorticoid dose (see section 3.3).

4.2 In order to assess adrenal function, patients should be advised to omit their prednisolone on the morning of the test and re-start their daily prednisolone dose immediately after the test until told otherwise (eg if test is taking place on Monday morning, patient should take their dose on Sunday morning as usual and delay their Monday dose until the test is completed).

4.3 Adrenal function can be assessed by measuring the following:

<u>a. Early morning cortisol (checked between 0800-1000hr)</u>

- Prednisolone can be safely stopped without taper if morning cortisol > 300 nmol/L
- If morning cortisol 100-300 nmol/L, patient should commence prednisolone taper as outlined in Table 1
- If morning cortisol <100 nmol/L, then consider delaying prednisolone taper and repeat testing in 2 months

b. Short synacthen test

- Should be performed between 0800-1000 ideally
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- Measure serum cortisol before and 30 minutes after Synacthen 250mcg IV or IM
- Prednisolone can be safely stopped if post-synacthen cortisol is > 430 nmol/L
- If post-synacthen cortisol 250-430 nmol/L, then continue/commence slow taper as outlined in Table 1
- If post synacthen cortisol < 250 nmol/L, then consider delaying prednisolone and taper and retest in 2 months
- Ensure patients aware of consequences of current glucocorticoid dependence (see appendix 1/2)

5 Useful Contact Details

ST Endocrinology (South) gg-uhb.endocrinereferralsouthglasgow@nhs.scot

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