Emergency management of Adrenal crisis (acute adrenal insufficiency) in adults

Trust reference: B2/2019

1. Introduction

- **Acute adrenal crisis (acute adrenal insufficiency)** is a life-threatening endocrine emergency as a result of lack of adequate production of cortisol.
- Identifying patients at risk and prompt management is vital as it can be fatal if left untreated.
- Adrenal crisis should be suspected with following presentation:

Clinical features

- **Weakness**
- **Lethargy**
- **Weight loss**
- **Dizziness**
- **Low BP**
- **Nausea & vomiting**

Clinical features

- **Abdo pain**
- **Fever**
- **Confusion**
- **Pigmentation if Addison's**
- **Muscle cramps**

Lab findings

- **Hyponatraemia**
- **Hyperkalaemia (only if Addison's)**
- **Hypoglycaemia**
- **Metabolic acidosis**
- **Acute kidney injury**

2. Scope

- This guideline is intended for all UHL clinicians managing adult patients with following conditions who are prone for adrenal crisis:

Conditions prone for crisis

- **Sudden stopping of long-term steroids**
- **Addison's disease**
- **Congenital Adrenal Hyperplasia**
- **Hypopituitarism**

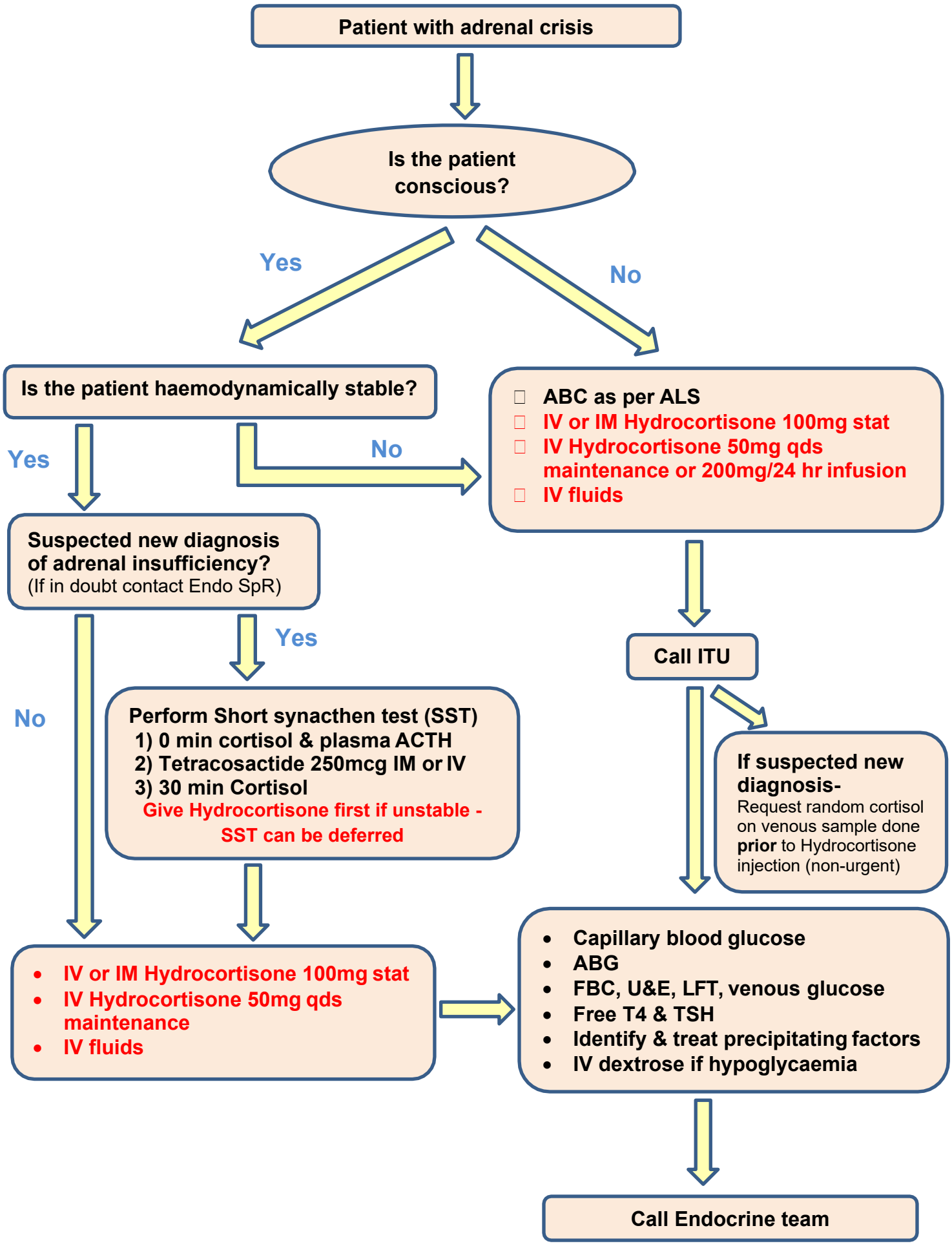
Precipitating causes

- **If chronic glucocorticoid intake is suddenly stopped**
- **Failure to observe steroid sick day rules (page 3)**

3. Management

a) Emergency management pathway

Emergency management of Adrenal crisis (acute adrenal insufficiency) in adults



b. Peri-operative steroid cover & post-emergency care

- IV Hydrocortisone 100mg at induction of anaesthesia.
- IV Hydrocortisone 50 mg QDS until able to have oral intake.
- Follow **post-emergency care** as below
- Switch to oral steroids when patient clinically stable.
- Place a gradual tapering of steroids plan if on long term Prednisolone.
- If on Hydrocortisone- needs at least oral 20/10/10 mg tds until full recovery.
- Continue oral fludrocortisone at same dose if already on it.
- Provide steroid safety education.
- Issue emergency hydrocortisone kit.
- F/U in Endocrine clinic as appropriate.

c. Steroid sick day rules

Sick day rule 1:

- **Double oral steroid dose in an event of illness and continue for the duration of illness**
- **Doubled dose of steroids not to exceed Prednisolone 30mg/day or steroid dose equivalent).**
- **Steroid dose equivalency:**

Prednisolone 5mg = Hydrocortisone 20mg = Dexamethasone 0.75mg

Sick day rule 2:

Switch to parenteral (IV Hydrocortisone 50mg qds) in an event of hypotension, trauma, surgery, anaesthesia etc., or if incapable of oral intake: *'nil by mouth'* or diarrhoea/vomiting.

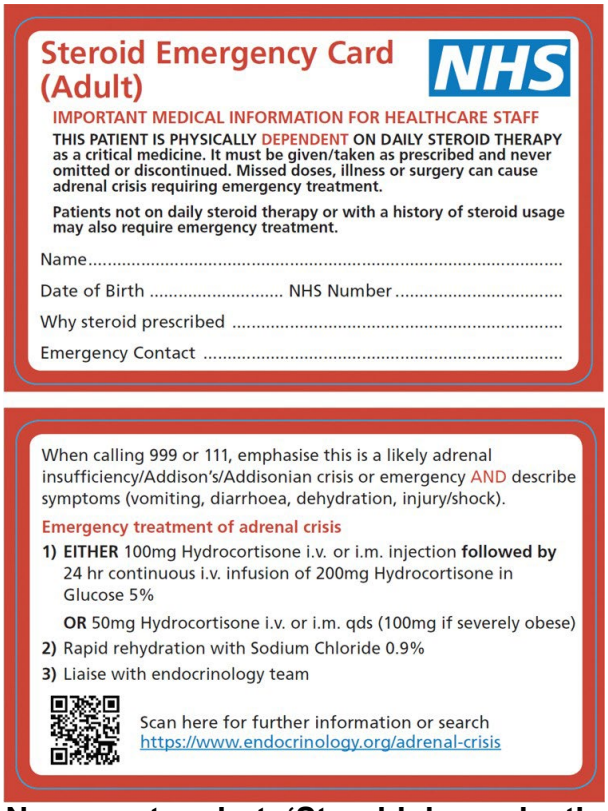
d. Patient education

- **Sick day rules 1 & 2**
- **Teach how to inject emergency hydrocortisone injection.**
- **Encourage wearing medical alert bracelets or pendants.**
- **Issue NHS Steroid Emergency Card.**
- **Issue steroid safety leaflet.**
- **Self-help group website.**

4. Education and training

a) NHS Steroid Emergency Card and QR code scan

- **Steroid Emergency Card** (shown below) should be issued to all steroid dependant patients which are now sourced trust wide in all clinical areas and pharmacies from May 13th 2021 as per National patient safety emergency steroid guidance from NHS England.



Steroid Emergency Card (Adult)

NHS

IMPORTANT MEDICAL INFORMATION FOR HEALTHCARE STAFF

THIS PATIENT IS PHYSICALLY DEPENDENT ON DAILY STEROID THERAPY as a critical medicine. It must be given/taken as prescribed and never omitted or discontinued. Missed doses, illness or surgery can cause adrenal crisis requiring emergency treatment.

Patients not on daily steroid therapy or with a history of steroid usage may also require emergency treatment.

Name.....

Date of Birth ..... NHS Number .....

Why steroid prescribed .....

Emergency Contact .....

When calling 999 or 111, emphasise this is a likely adrenal insufficiency/Addison's/Addisonian crisis or emergency AND describe symptoms (vomiting, diarrhoea, dehydration, injury/shock).

Emergency treatment of adrenal crisis

1) **EITHER** 100mg Hydrocortisone i.v. or i.m. injection **followed by** 24 hr continuous i.v. infusion of 200mg Hydrocortisone in Glucose 5%

OR 50mg Hydrocortisone i.v. or i.m. qds (100mg if severely obese)

2) Rapid rehydration with Sodium Chloride 0.9%

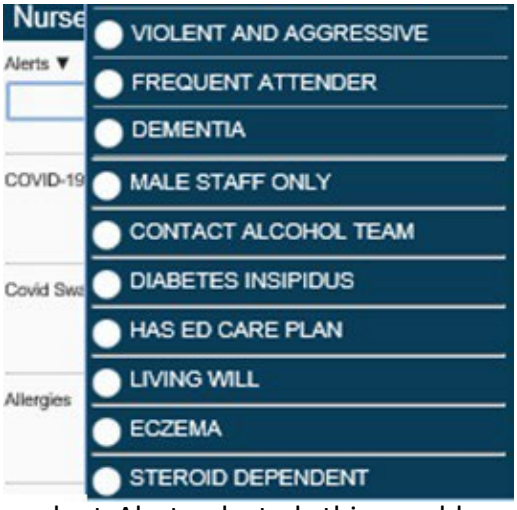
3) Liaise with endocrinology team

Scan here for further information or search https://www.endocrinology.org/adrenal-crisis

Please scan QR code below using QR scanner app on a smartphone or iPad to access more information about steroid safety

b) Nervecentre alert- 'Steroid dependant'

- All clinical and pharmacy staff should identify steroid dependant patients and issue the above emergency cards as well as insert **Steroid Dependant Alert** on Nervecentre (UHL patient management software) as shown below.
- In eligible patient screen, click 'Alerts' and select 'Steroid Dependant'.



- Once Steroid Dependent Alert selected, this would create a permanent tag as per the image below.

5. Monitoring compliance

Adherence to the guidelines in patients with adrenal crisis should ideally be monitored every 3 years by an audit, with input from endocrinology and chemical pathology.

6. Legal liability guideline statement

Guidelines or Procedures issued and approved by the Trust are considered to represent best practice. Staff may only exceptionally depart from any relevant Trust guidelines or Procedures and always only providing that such departure is confined to the specific needs of individual circumstances. In healthcare delivery such departure shall only be undertaken where, in the judgement of the responsible healthcare professional' it is fully appropriate and justifiable - such decision to be fully recorded in the patient's notes.

2. References & key web links

Pituitary foundation: www.Pituitary.org.uk https://youtu.be/NXXB3w1ADcI

Addison's disease self-help group https://www.addisons.org.uk/

Perioperative steroid management https://www.addisons.org.uk/files/file/4-adshg-surgical-guidelines/

SFE Adrenal crisis guideline https://ec.bioscientifica.com/view/journals/ec/5/5/G1.xml

How to use emergency kit http://endolri.org.uk/Endo_PDF/Hydrocortisone%20Emergency%20Kit%20Instructions.pdf

Patient steroid information leaflet http://www.endolri.org.uk/Endo_PDF/Steroid%20Replacement%20Treatment.pdf

8. Key words

Adrenal crisis, adrenal insufficiency, Addison's, congenital adrenal hyperplasia, hypopituitarism, adult patient, management.

CONTACT AND REVIEW DETAILS	
Guideline Lead **Dr Narendra Reddy, Consultant Endocrinologist, LRI**	**Executive Leads** **Andrew Furlong – Medical Director**
Details of Changes made during review:	