All Wales Medicines Strategy Group

Grŵp Strategaeth Meddyginiaethau Cymru Gyfan

All Wales Paediatric Steroid Replacement Therapy Card

1.0 BACKGROUND

Patients that require long-term steroid replacement therapy for adrenal suppression are at risk of adrenal crises at times of illness. A poster compiled by paediatric consultants at the Abertawe Bro Morgannwg health board documenting these risks can be seen in Appendix 1.

There have been adverse incidents where appropriate medical treatment has been delayed or not followed[1]. It was brought to the attention of paediatricians in Swansea that paramedics attending incidents were unable to administer the recommended therapy (intramuscular hydrocortisone), despite there being a written health care plan in place.

There are several circulating steroid cards in existence. Discussions between members of the Brecon Group resulted in a recommendation that a standardised advice leaflet/card for patients to carry, containing appropriate advice for such circumstances, should be produced for Wales. Discussions with the Welsh Ambulance Service Trust (WAST) have taken place and a card produced in collaboration (see section 2.0). WAST have committed to provide ongoing training of paramedics to recognise the new card and administer intramuscular hydrocortisone at the scene.

It is envisaged that all patients at risk of adrenal suppression will carry the new wallet-sized card, which would alert paramedics to their condition, provide emergency contact information and provide advice regarding emergency treatment. This will help to ensure the risks are greatly reduced and ensure patients are treated appropriately with minimisation of adverse events.

The patient groups that would carry the card include those with adrenal insufficiency due to:

- Primary insufficiency (due to abnormalities in adrenal gland)
    - Congenital adrenal hyperplasia
    - Adrenoleukodystrophy
    - Autoimmune adrenalitis or Addison's disease
- Secondary insufficiency (due to impairment of hypothamic pituitary axis)
    - Hypopituitarism

2.0 PAEDIATRIC STEROID REPLACEMENT THERAPY CARD

The following pages show the A4 leaflet version. This should be printed double-sided and folded into thirds. An identical, wallet-sized version is also available.

IMPORTANT

Instructions for hospital doctor

This child has a diagnosis of

.....

.....

If this child is brought to hospital as an emergency case, the following management is advised:

- Take blood for U&Es, blood glucose and, if necessary, any other appropriate tests, e.g. blood cultures.
- Check capillary blood glucose.
- Give hydrocortisone IV as a bolus (dosage as shown in Table 2) (*unnecessary if child has had IM hydrocortisone within the previous 4 hours*).
- Commence IV transfusion of 0.9% saline and 5% dextrose at maintenance rate (extra if dehydrated). Add potassium depending on electrolyte result.
- If blood glucose < 2.5 mmol/l, give bolus of 2 ml/kg 10% dextrose and monitor blood glucose.
- If patient is drowsy, hypotensive and peripherally shut down, give 20 ml/kg normal saline.
- Hydrocortisone must either be given orally or IV if vomiting continues.

ON ADMISSION PLEASE INFORM

Dr

(ext)

- If IV hydrocortisone is required, calculate the normal daily dose and triple it. Give this calculated dose as four, equally divided doses, e.g. patient is normally on 10 mg/day, triple dose = 30 mg, given as 7.5 mg qds.
- Consider giving this increased daily dose as a continuous IV hydrocortisone infusion to severely ill patients (50 mg hydrocortisone in 50 ml normal saline), e.g. if total tripled daily dose = 30 mg hydrocortisone, give infusion of 1.25 mls/hour (30 mg/24 hours).
- If child is also on DDAVP, fluid balance will need to be monitored carefully and dose alteration considered.
- Once child is better, the hydrocortisone dose should be reduced back to normal maintenance dose after 2–3 days (for usual dose see Table 1).
- Some children may also be on fludrocortisone. If vomiting and unable to tolerate this orally, electrolytes will need to be monitored twice daily and appropriate sodium replacement made IV.

GIG CYMRU NHS WALES

PAEDIATRIC STEROID REPLACEMENT THERAPY CARD

The holder of this card has the condition:

ADRENAL INSUFFICIENCY

NAME:

ADDRESS:

DATE OF BIRTH: / /

HOSPITAL NUMBER:

Hospital Consultant:

USEFUL NUMBERS

Hospital switchboard:

Ward:

Paediatric Assessment Unit:

Secretary:

Specialist Nurse:

GP name/address:

Tel:

TABLE 1: CURRENT ORAL TREATMENT

These are the medications your child is currently taking. Ask your doctor to write any changes in doses with the date of the change.

Date	Medication	Tablet size/solution strength	Normal dose	Dose during illness (e.g. doubled)
			Morning	Morning
			Lunch	Lunch
			Evening	Evening
			Morning	Morning
			Lunch	Lunch
			Evening	Evening

TABLE 2: EMERGENCY DOSE OF INTRAMUSCULAR HYDROCORTISONE INJECTION

Age of child	Dose of intramuscular hydrocortisone injection
Under 1 year	25 mg
1–5 years	50 mg
Over 5 years	100 mg

ANASTHAESIA: IMPORTANT INFORMATION

In the event of your child needing an anaesthetic either as an emergency or for a routine procedure, please speak to the admitting doctor and the anaesthetist about hydrocortisone cover for the procedure.

IF YOUR CHILD IS UNWELL

- In the event of mild to moderate illness, e.g. cold, cough, sore throat, please double the hydrocortisone dose for the duration of the illness (please see Table 1 "dose during illness"). If your child takes fludrocortisone this does not need to be doubled.
- Hydrocortisone must be given by injection if your child;
  - does not get better after you have increased the tablets, or
  - feels drowsy, or
  - is unable to take the tablets orally (e.g. due to continued vomiting).

  It is vital that you keep a supply of hydrocortisone injection in your fridge. **Please check it is not past its expiry date.**
- The emergency dose of hydrocortisone injection is shown in Table 2 and will change as your child gets older. In the event of having to use the injection, you should seek medical attention.
- If your child continues to be ill, despite increasing the hydrocortisone, or you have needed to use the hydrocortisone injection, telephone your nearest hospital and say that you are bringing your child for assessment or go to A&E. Please take this card with you and show the instructions to the admitting doctor. If you do not have immediate access to transport, ring 999 and present this card to the ambulance crew.

REFERENCES

1 Marcovitch H. When are paediatricians negligent? *Archives of Disease in Childhood* 2011; 96 (2): 117-20.

APPENDIX 1. POSTER PRESENTED AT BRITISH SOCIETY FOR PAEDIATRIC ENDOCRINOLOGY (BSPED) MEETING

All Wales Steroid Card – The way forward

Dr Kavitha Tharian, Dr Rebekah Pryce,
Abertawe Bro Morgannwg University Health Board, Swansea, S.Wales

Introduction

Children on long term steroid replacement for adrenal insufficiency may need emergency administration of intramuscular (IM) hydrocortisone (HC) when unwell.

Potential risk identified

▪Recent incident in Wales

▪A child on long term HC for hypopituitarism became unwell at school.

▪Ambulance crew refused to administer IM HC as underlying diagnosis was not Addison's disease!

▪Fortunately child not significantly unwell. This episode highlighted a potentially serious risk.

In the interim

▪In Swansea, patients on long term steroids are registered with Welsh Ambulance Service Trust (WAST)

▪This places alert on ambulance computer system to highlight potential need for Hc to prevent further incidents.

The way forward

▪ **'All Wales Steroid Card'** in conjunction with WAST in development.

▪Once developed paramedics in WAST undergo training to recognise and implement card advice to give IM HC (even if guideline remains unchanged).

▪Potential to be adopted to all UK

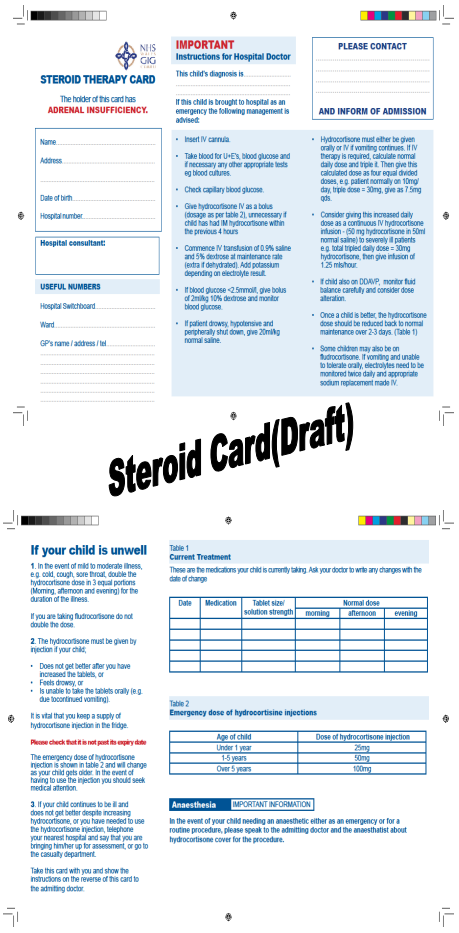
The issue

▪Majority of paediatric patients needing steroid replacement do not have Addison's disease. (i.e. adrenal insufficiency from other causes)

▪Current ambulance guidelines suggest HC can only be administered for Addison's. This may cause potential life threatening delay in treatment to a large group of patients.

▪All ambulances carry hydrocortisone but unable to administer for adrenal insufficiency.

▪All UK ambulance trusts have same guidelines-potential problem for all UK.



Risk Management

▪Issue highlighted to local ambulance service/endocrine groups and BSPED

▪Letters to highlight risk to the ambulance guidelines committee to recommend change in guidelines.

▪Recommend guidelines are clear that any patient on long term steroid replacement may present in "adrenal crisis" at times of illness and a dose of IM HC should be considered in these circumstances.