Surgical guidelines for Addison's disease and other forms of adrenal insufficiency

Potentially life-threatening steroid dependency: patients require continuous steroid cover

Steroid and saline requirements for surgery and dentistry

Available online at www.addisons.org.uk/surgery
<table>
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<th>TYPE OF PROCEDURE</th>
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| **LENGTHY, MAJOR SURGERY WITH LONG RECOVERY TIME** eg. open heart surgery, major bowel surgery, | **100mg hydrocortisone IM or IV just before anaesthesia. (See Notes 2, 3, 7)** Immediately followed by:  
  - 100mg IM or IV 6 hourly or  
  - continuous infusion 200mg/24 hours | **100mg IM or IV every 6 hours or continuous IV infusion 200mg/24 hours (See Notes 3, 5) or until able to eat & drink normally (discharged from ITU)** If well, then double oral dose for 48+ hours. Then taper the return to normal dose |
| **MAJOR SURGERY WITH RAPID RECOVERY** eg. caesarean section, joint replacement | **100mg hydrocortisone IM or IV just before anaesthesia. (See Notes 2, 6, 7)** Immediately followed by continuous IV infusion 200mg/24 hours or 100mg IM or IV 6 hourly until delivery | **100mg IM or IV or continuous infusion 200mg/24 hours for 24 - 48 hours (See Notes 3, 5) for 24 - 48 hours (or until able to eat and drink normally)** If well, then double oral dose for 24 - 48 hours. Then return to normal dose |
| **LABOUR AND VAGINAL BIRTH** eg. cataract surgery, hernia repairs, laparoscopy with local anaesthetic | **100mg hydrocortisone IM or IV at onset of active labour. (See Note 4-7)** Immediately followed by IV infusion 200mg/24 hours or 100mg IM or IV 6 hourly until delivery | Double oral dose for 24 - 48 hours after delivery. If well, then return to normal dose |
| **MINOR SURGERY** eg. skin mole removal with local anaesthetic | **100mg hydrocortisone IM just before anaesthesia (See Note 6)** | Double oral dose for 24 hours. Then return to normal dose |
| **MINOR PROCEDURE** eg. skin mole removal with local anaesthetic | Take an extra oral dose, 60 minutes ahead of the procedure | An extra dose 60 minutes after the procedure. Then return to normal dose |
| **INVASIVE BOWEL PROCEDURES REQUIRING LAXATIVES** eg. colonoscopy, barium enema | **100mg hydrocortisone IM at commencement (See Notes 1, 6)** | Double dose oral medication for 24 hours. Then return to normal dose |
| **OTHER INVASIVE PROCEDURES** eg. endoscopy, gastroscopy | **100mg hydrocortisone IM just before commencing** | Double dose oral medication for 24 hours. Then return to normal dose |
| **MAJOR DENTAL SURGERY** eg. dental extraction/s with local or general anaesthetic | **100mg hydrocortisone IM just before anaesthesia (See Notes 6, 7, 8)** | Double dose oral medication for 24 hours. Then return to normal dose |
| **DENTAL SURGERY** eg. root canal work with local anaesthetic | Double oral dose (up to 20mg hydrocortisone) one hour prior to surgery | Double dose oral medication for 24 hours. Then return to normal dose |
| **MINOR DENTAL PROCEDURE** eg. replace filling, scale and polish | Take an extra oral dose, 60 minutes ahead of the procedure | An extra dose where hypoadrenal symptoms occur afterwards. Then return to normal dose |
1. Give the steroid-dependent patient first-on-the-list status (alongside insulin-dependent diabetes) to minimise the risks of dehydration.

2. For any nil-by-mouth regimen, arrange an intravenous saline infusion (0.9% saline or equivalent) to prevent dehydration and maintain mineralcorticoid stability, eg. 1000ml every 8 hours if >50kg.

3. Continuous IV hydrocortisone infusion is preferable to 6 hourly IM or IV injection as it gives more stable cover. Arrange as 100mg bolus followed by 8.33mg per hour or 200mg per 24 hours.

4. Active labour is cervical dilation >4cm.

5. Arrange continuous IV infusion cover for steroid-dependent patients taking CYP3A4 accelerants, eg. anticonvulsants, rifampicin and antifungal drugs, to minimise the risk of decompensation.

6. IM hydrocortisone is preferable to IV injection for its more sustained duration.

7. Administer bolus hydrocortisone over a minimum of 10 minutes to prevent vascular damage.

8. Hydrocortisone acetate cannot be used due to its slow-release, microcrystalline formulation. Ensure parenteral drug is hydrocortisone sodium phosphate or hydrocortisone sodium succinate, 100mg.

9. Monitor electrolytes and blood pressure post-operatively for all procedures requiring parenteral steroid cover. If the patient becomes hypotensive, drowsy or peripherally shut down, administer 100mg hydrocortisone IV or IM bolus immediately.

10. If any post-operative complications arise, eg. fever, delay the return to normal dose.

11. Ensure back-up supplies of oral and injectable hydrocortisone are available for resuscitation before commencing surgery. Even at full steroid cover, post-operative resuscitation may occasionally be required.

12. A pre-assessment meeting with the anaesthetist is advisable for all steroid-dependent patients, to ensure any comorbidities and potential drug interactions are taken into account.

13. Patients who have been taking 5mg prednisolone or more long-term should be regarded as potentially suppressed and managed with perioperative supplemental steroid cover, on a precautionary basis.
ACAP is a group of endocrinologists with an interest in adrenal medicine.

It advises the Addison’s Disease Self-Help Group on clinical matters. Further information about ACAP is available on the ADSHG website at www.addisons.org.uk

ACAP has also issued emergency treatment guidance for adrenal crisis, and other patient information leaflets, available at www.addisons.org.uk/publications.

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The Addison’s Disease Self-Help Group works to support people with adrenal failure and to promote better medical understanding of this rare condition.

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www.addisons.org.uk