

## Corticosteroids in Advanced Cancer<sup>15,16</sup>

### Preparations

- Dexamethasone** - Oral 500mcg, 2mg Inj 4mg/ml, 8mg/2ml  
**Prednisolone** - Oral 1mg, 5mg, 25mg, e/c 2.5mg, 5mg, Soluble scored 5mg  
**Hydrocortisone** - Oral replacement 10mg, 20mg Inj 100mg

### Conversion from oral to s/c

80% bioavailability orally therefore use a direct 1:1 conversion

### Potency

**Dexamethasone is 7 times more potent than Prednisolone**

### Choice

1. Dexamethasone: Little mineralocorticoid action therefore less fluid retention. More potent therefore fewer tablets required at higher doses
2. Chest physicians may use Prednisolone or Dexamethasone

### Duration of effect

- Dexamethasone 36–54hrs
- Prednisolone 18–36hrs

### Administration:

- Single daily dose as preparations are long acting (but depends on number of tablets to take).
- **NB Hydrocortisone is a bd dose**
- Take Prednisolone or dexamethasone before 18.00hrs as may cause insomnia.
- In patients who have received 40mg Prednisolone or 6mg Dexamethasone for greater than 3 weeks **withdrawal should not be abrupt**. If stress (infection, trauma, surgery) occurs up to one week after stopping treatment then systemic steroid cover should be provided
- Steroids are normally prescribed as a reducing dose.
- Some patients need a maintenance dose for their symptoms. If no response to steroids after 5-7 days they should be discontinued.
- Use **STEROID CARD**.
- On high dose steroids check urine for glucose ( 2-3 times weekly), if glycosuria present, measure blood glucose.

### Indications for Use of Corticosteroids:

Specific	Dose of Dexamethasone
Spinal cord compression	16mg
Raised intracranial pressure	16mg
Superior vena cava obstruction	16mg
<b>Dyspnoea:</b>	
• Pneumonitis (after radiotherapy)	8mg
• Carcinomatous lymphangitis	8mg
• Tracheal compression/stridor	8mg
<b>Pain relief</b>	
Nerve compression/ Carcinomatous neuropathy	8mg
Bowel Obstruction	8mg
To reduce radiation induced inflammation	8mg
<b>Hormone therapy</b>	
Replacement	
Anticancer	
<b>General</b>	2-4mg for 5-7 days
To improve appetite	<b>if no improvement stop or wean off</b>
To enhance sense of wellbeing	
To improve strength	

## Side effects of Corticosteroids:

<p><b>Glucocorticosteroid effects</b></p> <p>Diabetes Osteoporosis Avascular necrosis Mental disturbances: • paranoid psychosis • depression • euphoria</p> <p>Muscle wasting Peptic ulceration (if given with NSAIDs) Infection: • septicaemia (may delay recognition) • tuberculosis</p> <p>Suppression of growth in child</p> <p><b>Mineralocorticosteroid effects</b></p> <p>Hypertension Sodium and water retention Potassium loss</p> <p><b>Cushing's syndrome</b></p> <p>Moon-face Striae Acne</p> <p><b>Steroid cataract</b></p> <p>If Prednisolone 15mg (or equivalent) taken daily for several years = 75% risk</p>
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<p><b>Corticosteroid Myopathy - Symptoms:</b></p> <p>Generally insidious onset Diffuse myalgia may occur (Askari et al 1976) Difficulty with:</p> <ul style="list-style-type: none"> <li>• Climbing stairs } early</li> <li>• Standing up }</li> <li>• arm elevation }</li> <li>• holding head up } late</li> <li>• distal extremities }</li> </ul> <p><b>Signs</b></p> <ul style="list-style-type: none"> <li>Weakness } usually</li> <li>Wasting } symmetrical</li> </ul> <p>Hypercortisolism:</p> <ul style="list-style-type: none"> <li>• moon-face</li> <li>• abdominal striae</li> <li>• ankle oedema</li> </ul> <p><b>Normal</b></p> <p>Reflexes Sensation Enzymes (AST, CPK, aldolase)</p> <p><b>Differential diagnosis</b></p> <p>Hypokalaemia Hypophosphataemia Nonmetastatic carcinomatous neuropathy/myopathy Lumbosacral plexopathy Spinal cord compression</p>
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### Peptic Ulcers

Risk significantly increased if taking NSAIDs & steroids. Prescribe a proton pump inhibitor

### Osteoporosis

See guidelines for osteoporosis York Health Services & Selby & York PCT, NYHA (draft)

### Drugs Interactions

- Antidiabetic treatments
- Antihypertensives (because of mineralocorticoid effect)
- Increased risk of hypokalaemia if prescribed with:
  - B<sub>2</sub> sympathomimetics (Salbutamol)
  - Carbenoxolone

### Metabolism of Corticosteroid accelerated by

- Aminoglutethimide (Dexamethasone only)
  - Anticonvulsants- Carbamazepine
    - Phenytoin (Bioavailability of Dexamethasone can be decreased by 25-50%)
- ∴ **Dexamethasone should be increased accordingly**
- Primidone

- Rifampicin

**NB** Worse for longer acting glucocorticoids

Drug	Anti-inflammatory potency	Equivalent Dose	Sodium retaining potency	Daily dose above which hypothalamo-pituitary axis suppression possible	Plasma t <sub>1/2</sub> (half life)	Biological t <sub>1/2</sub> (half life)
				M                  F		
Hydrocortisone	1	28mg	++	20 -30mg    15 - 25mg	90min	8-12 hour
Prednisolone	5	7mg	+	7.5 -10mg    7.5mg	>>200min	18-36 hour
Dexamethasone	25-30	1mg	-	1- 1.5mg    1- 1.5mg	>>300min	36-54 hour