

## 7 ENDOCRINE SYSTEM

### 7.01 CORTICOSTEROIDS

GENERIC (TRADE) NAME	CAT.	INDICATION/DOSE
<b>Dexamethasone Inj 8mg/2ml (as sodium phosphate) (Decadron)</b>	EDL	IM, slow IV or IV infusion, initially 0.5-20mg; child 200-500ug/kg/DAY. Cerebral oedema: slow IV 10mg, then IM 4mg q6h as needed.  Give IM/slow IV undiluted, for IV infusion further dilute 8mg with 50ml D5/NS and infuse over 15-30min.
<b>Hydrocortisone Inj 100mg/2ml or 100mg vial (as sodium succinate) (Solu-Cortef)</b>	MSL  EDL	IM & slow IV or IV infusion: Adult 100-500mg, child < 1yo 25mg, 1-5 yo 50mg, 6-12 yo 100mg; q6-8h <i>prn</i> . Angioedema or anaphylactic shock: IV 100-300mg <i>prn</i> .  For IM/IV reconstitute vial with 2 ml of NS/WFI, give slow IV over 3-5 min; for IV infusion further dilute 100mg with 100mls of D5/NS and infuse over 20-30min.
<b>Prednisolone Tab 5mg, 25mg &amp; 50mg</b>	MSL  EDL	Initial dose depends on disease process, up to 1mg/kg (max 60mg) daily, in the morning after breakfast. Maintenance: 2.5-15mg om.
<b>Triamcinolone Acetonide Inj 10mg/ml, 2ml (Adcortyl, Kenalog-10)  [Not for IM use]</b>		Intra-articular: 2.5-15mg (depending on joint size & severity). Intradermal: 2-3mg (depending on lesion size) max 30mg (not > 5mg at any one site). See manufacturer's leaflet for details.

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**COMMENT/CAUTIONS:**

- **Equivalent anti-inflammatory corticosteroid doses** [This table takes no account of mineralocorticoid effects nor does it take account of variations in duration of action]:
 

<b>Prednisolone 5mg</b>	
≡ Betamethasone 750micrograms	≡ Cortisone 25mg
≡ Dexamethasone 750micrograms	≡ Hydrocortisone 20mg
≡ Methylprednisolone 4mg	≡ Triamcinolone 4mg
- **Patient counselling** – Advise patients on systemic corticosteroids to consult their doctor promptly if they come into close contact with anyone who has chickenpox or shingles, or if they become ill. Patient steroid booklets and counselling may be available from Pharmacy.

**7.02 ANTITHYROID AND THYROID PREPARATIONS**

GENERIC (TRADE) NAME	CAT.	INDICATION/DOSE
* <b>Carbimazole Tab 5mg (Neomercazole)</b>		Initially 15-40mg daily in 2-3 divided doses; maintenance 5-15mg daily; child initially 250ug/kg/DOSE given 3 times daily adjusted to response.
<b>Propylthiouracil Tab 50mg</b>	NF  EDL	Hyperthyroidism: initial daily dose 300-600mg in divided doses or once daily; maintenance 50-150mg daily.
* <b>Thyroxine Sodium Tab 100ug</b>	EDL	Hypothyroidism: adult & child > 6 yo, initially 50-100ug in the morning before breakfast (elderly/cardiac disease 25-50ug, increase at intervals of 4 weeks); usual range 100-200ug om; infants 5-10ug/kg/DAY up to max 50ug om, up to 5 yo 75-100ug om.

**COMMENT/CAUTIONS:**

- **Carbimazole:** Warn patient to tell doctor immediately if sore throat, mouth ulcers, bruising, fever, malaise or non-specific illness develops whilst on carbimazole. This may indicate the rare but serious side effect of agranulocytosis. Rashes are also common but can be controlled with antihistamines without discontinuing therapy.
- **Thyroxine:** Caution in patients with cardiovascular disorder or adrenal insufficiency. S/E: arrhythmia, anginal pain, tachycardia, cramps in skeletal muscles, headache, restlessness, excitability, flushing, sweating, diarrhoea, excessive weight loss.

## 7.03 INSULINS

GENERIC (TRADE) NAME	CAT.	INDICATION/DOSE
<b>Insulin, Soluble 100iu/ml 10ml (Neutral insulin, R) (Actrapid HM)</b>	EDL	SC, IM, IV or IV infusion, according to patient's requirements.
Note: Only short-acting insulins can be given intravenously. °Fridge Item unless current in use.		

**COMMENT/CAUTIONS:**

- **Acute illness:** Insulin requirement may vary - consider transfer to Actrapid SC q6h; never reduce or stop insulin in patients with vomiting as extra insulin may be needed.
- If **pregnancy** is planned, and during pregnancy, assess insulin requirements frequently. Fetal malformations & peri-natal fetal mortality are associated with poor control in pregnancy.
- **Beta-blockers** especially non-selective ones may mask the onset of hypoglycaemic symptoms.
- **Administration:** when mixing insulins draw up the shorter-acting one first and administer directly after mixing. Patient counselling on insulin management is available from pharmacy.
- Patients should only be transferred from one brand of insulin to another under medical supervision and in most instances they can be initiated at the same dose and schedule.
- **Diabetic ketoacidosis:** Give insulin by IV infusion well diluted to 1 unit/ml in NS, at a rate of 6units/hr (adults) or 0.1unit/kg/hr (children). When plasma glucose is acceptable reduce rate to 3 units/hr (adults) or 0.02unit/kg/hr (children), until SC insulin regime is restarted.

## 7.04 ORAL HYPOGLYCAEMIC AGENTS

GENERIC (TRADE) NAME	CAT.	INDICATION/DOSE
<b>Glibenclamide (Glyburide) Tab 5mg (Daonil) [Sulphonylurea]</b>	EDL	Initially, 5mg daily with breakfast (elderly 2.5mg); max 15mg daily; doses greater than 10mg may be given in 2 divided doses.
<b>*Metformin HCl Tab 500mg (Glucophage) [Biguanide]</b>	EDL	Initially 500mg 3 times daily with food; max 2g daily in divided doses.

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**COMMENT/CAUTIONS:**

- **Sulphonylureas S/E:** GI disturbances, headaches, sensitivity reactions (usually in early stages of therapy), rarely blood disorders.
- **Metformin C/I:** renal impairment (GFR<50ml/min), chronic hepatic disease, and in significant IHD. **S/E:** GI disturbances, lactic acidosis (↑ risk with alcohol). Monitor vit B<sub>12</sub> levels yearly.
- **DRUG-INDUCED HYPOGLYCAEMIA:** hypoglycaemia may be potentiated by sulphonamide, salicylates, clofibrate, alcohol, oral anticoagulants (monitor closely), beta-blockers, MAOIs, and chloramphenicol.
- Hypoglycaemia may also be reduced by oral contraceptives, corticosteroids, phenytoin, diuretics.

**7.05 SEX HORMONES & RELATED DRUGS**

<b>GENERIC (TRADE) NAME</b>	<b>CAT.</b>	<b>INDICATION/DOSE</b>
<b>Estrogen, Conjugated Tab 0.625mg (Premarin) [HRT]</b>	EDL	Menopausal/post-menopausal symptoms: orally 0.625mg daily, usually on a cyclical basis and in conjunction with an added progesterone for part of the cycle. Topically, insert 1-2g daily with applicator, starting on day 5 of cycle for 3 wk, then stop for 1 wk (add progesterone if long-term treatment).
<b>Ethinylestradiol 30ug/ Levonorgesterol 150ug Tab (Microgynon 30) [Combined Oral Contraceptive, COC]</b>	EDL	Oral one tablet daily taken same time each day, starting on the 5 <sup>th</sup> day after the beginning of the menstrual period (menses) and continued for 21 days, then wait 7 days before beginning the next cycle of tablets.
<b>Medroxyprogesterone Acetate Tab 5mg (Provera) [HRT]</b>	EDL	2.5-10mg daily for 5-10 days starting day 16 to 21 of cycle in dysfunctional uterine bleeding. Mild/moderate endometriosis: 10mg 3 times daily for 90 consecutive days, beginning the 1 <sup>st</sup> day of cycle.

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GENERIC (TRADE) NAME	CAT.	INDICATION/DOSE
<b>Norethisterone Tab 5mg</b> [HRT]	EDL	Endometriosis: 1àmg daily starting on day 5 of cycle, increased if spotting occurs to 20-25mg daily, reduced once bleeding stops. HRT: 1 tablet daily on days 15-26 of each 28-day estrogen HRT cycle.
<b>Oxytocin Inj 10iu/ml</b>  °Fridge Item	MSL  EDL	Induction & augmentation of labour: IV infusion of 5-10 units in 1000mls of D5/NS/LR solution, infused at a rate of 0.5-5ml/min titrated to patient response. Postpartum haemorrhage: IM or IV infusion 5-10 units as above titrate to response, (conc 10-40iu/ml recommended).

**COMMENT/CAUTIONS:**

- **COC Initiation:** Use another form of contraceptive for the first 7 cycle days.
- **COC Missed tablets:** Take missed tablet as soon as possible and take the next tablet at the usual time, but use another method of contraceptive for the remainder of the cycle.
- **COC Breastfeeding:** Start 12 weeks after delivery to avoid affecting breast milk supply.
- **COC C/I:** Thromboembolism/phlebitis (present/history), pregnancy, cerebral vascular or coronary artery disease, estrogen-dependent cancer, unexplained vaginal bleeding/ or amenorrhoea, diabetes with vascular disease, hypertension, liver/heart/renal/adrenal disease, heavy smoker > age 35, headaches with focal neurological symptoms.
- **COC Precautions:** Weight change, lipid/liver/GI/emotional disorders, undiagnosed bleeding irregularities, fluid retention, contact lenses, recommend annual med history/exam.
- **COC Drug Interactions:** reduced contraceptive effect by rifampicin and broad-spectrum antibiotics, griseofulvin and antiepileptics; antagonise anticoagulant effects, may increase side effects of tricyclic antidepressants.
- **HRT Drug Interactions:** Unlikely due to the low dose of oestrogen in HRT.
- **HRT C/I:** Estrogen dependent cancer, active thrombophlebitis or thromboembolic disorders, liver disease, unexplained vaginal bleeding, pregnancy or breast-feeding.