

HYPERPARATHYROIDISM, PRIMARY

Treatment guidelines

Management		Comments
Non-drug treatment	Surgery for autonomous hyperfunction, complications such as pathological fractures, and renal calculi.	<p>Definition: A hypercalcaemic disorder which results from excessive secretion of PTH.</p> <p>Pathogenesis Hyperplasia or adenomata secreting parathormone. Sporadic; or part of autosomal dominant traits - MEN 1; MEN 2A; isolated familial hyperparathyroidism. Female:Male = 3:1; prevalence increases with aging.</p> <p>Referral criteria</p> <ul style="list-style-type: none"> • Parathyroidectomy, serum Ca >2.7 mmol/L • Previous severe hypercalcaemia • Impaired renal function, renal calculi; urine calcium >400 mg/24 hours • Osteopenia present • Age of patient <50 years
Drug treatment Moderate hypercalcaemia (Ca <3.4 mmol/L + symptoms)	Sodium chloride solution 0.9%, IV infusion, 4–6 L/24 hours PLUS Furosemide, IV, 10–20 mg 6–12 hourly	

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Treatment guidelines:- HYPERPARATHYROIDISM, PRIMARY (continued from previous page)

Management		Comments
	<p>If after 24 hours and adequate hydration, serum calcium is still over 3 mmols: ADD Bisphosphonates - e.g. Etidronic acid, oral, 5 mg/kg/day initially as a single dose 2 hours before a meal, or 5–20 mg daily until calcium is lowered OR Pamidronic acid, IV infusion, according to plasma calcium concentration, 15–60 mg over 1–4 hours, (each 15 mg diluted in 125 mL sodium chloride solution 0.9% and given over 1 hour)</p>	
<p>Severe hypercalcaemia (Calcium >- 3.5 mmol/L):</p>	<p>Sodium chloride solution 0.9%, IV infusion, 4–6 L/24 hours PLUS Furosemide, IV, 10–20 mg 6–12 hourly PLUS Prednisone, oral, 40 mg daily, PLUS Bisphosphonate, IV infusion Pamidronic acid, IV infusion according to plasma calcium concentration, 15–60 mg over 1–4 hours, (each 15 mg diluted in 125 mL sodium chloride solution 0.9% and given over 1 hour).</p>	<p>Consider peritoneal dialysis, if there is no satisfactory response.</p>

HYPERTHYROIDISM

Treatment guidelines

Management		Comments
Non-drug treatment	Supportive care	Referral criteria <ul style="list-style-type: none"> • Initial diagnosis: Thyroid crisis, Thyro-cardiac disease • Ophthalmopathy or skeletal myopathy. • Surgery; or radio-active iodine therapy, if deemed necessary • Post surgery complications. • Disease in pregnancy
Drug treatment	First line treatment:	Carbimazole, oral, 30–45 mg in 1 or 2 divided doses, until euthyroid, then maintenance dose, usually 5–15 mg daily
	Second line treatment:	Beta blocker: e.g. Propranolol, oral, 20–40 mg daily, titrated and guided by pulse rate
	Hormone replacement if hypothyroid (post thyroiditis):	Levothyroxine, oral, 50–150 micrograms daily
		Start with these high doses. It takes 4–8 weeks to become euthyroid. After 12 months, stop all therapy and evaluate 3-monthly for 12 months (for relapse) and then annually.
		Seldom indicated, but used for palpitations or tachyarrhythmias. Start with low doses.
		Check for hypothyroidism (or relapse) every 3–4 months in the first year; thereafter annually (or patient's preference).

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Treatment guidelines:- HYPERTHYROIDISM (continued from previous page)

Management		Comments
Emergency: Thyroid crisis	IV fluids as indicated Vitamin B complex, IV, 1–2 mL in 1 L dextrose 5% in water PLUS Carbimazole, oral, 30 mg 6 hourly followed by Lugol's iodine 10 drops in milk 3 times daily. Start with second dose of carbimazole and continue until crisis is controlled. PLUS Propranolol, oral, 60–120 mg 6 hourly.	Treat precipitating illness- infection ICU admission is mandatory Refer after stabilisation

HYPOGLYCAEMIA IN DIABETES MELLITUS

Treatment guidelines

Management		Comments
Non-drug treatment	Patient education on diabetic care	Referral criteria <ul style="list-style-type: none"> • Recurrent hypoglycaemia • Other causes of coma suspected / no recovery after an hour.
Drug treatment	Dextrose 50% in water, IV, 50 mL rapidly, immediately OR Glucagon, IM, 1 mg at once	Assess clinical and biochemical response over the next 5–10 minutes, check potassium. Repeat IV dextrose 50% in water if necessary. Continue infusion until patient can take oral fluid. Once blood glucose is normal or elevated, and the patient is awake, check blood glucose hourly for several hours, and check serum potassium (for hypokalaemia). Give glucagon IM if IV dextrose cannot be given for any reason.
	Thiamine, IV, 100 mg PLUS Dextrose 5% in water, 1 L immediately, follow with 1 L/hour until consciousness is regained and blood sugar is normal.	Keep venous line open, maintain consciousness Prevent relapse, check blood glucose and potassium

HYPOTHYROIDISM

Treatment guidelines

Management		Comments
Non-drug treatment	Patient education with respect to compliance with treatment and self-care.	Referral criteria <ul style="list-style-type: none"> • Cardiac complications of myxoedema. • Neuromuscular disease. • Hypothermia • Coma
Drug treatment Hypothyroidism—acute, recent:	Levothyroxine, oral, 100 micrograms daily.	Check TSH, FT4, (FT3) after 2–3 months
Hypothyroidism—long standing:	Levothyroxine, oral, 50 micrograms daily. If there is a risk of ischaemic heart disease, start at 25 micrograms daily and increase by 25 micrograms every 4 weeks.	TSH levels may take several months to stabilise. Check FT4 and TSH annually.
Hypothyroidism in pregnancy – on treatment:	Levothyroxine, oral, 50 micrograms daily and titrate to desired effect.	About 60% of hypothyroid pregnant women need an increase in thyroxine therapy in the second and third trimesters. Check TSH monthly and increase thyroxine doses to keep serum TSH levels low normal. After delivery, revert to pre-conception doses.

OBESITY

Treatment guidelines

Management		Comments
Non-drug treatment General principles:	To achieve and maintain ideal weight.	Definition Overweight is defined as a body mass index (BMI) of 25–30 for women and 27–30 for men, and obesity as a BMI above 30. This is the body weight (kg), divided by the height (m) squared (wt/ht^2), and can either be obtained from nomograms or calculated. Referral criteria <ul style="list-style-type: none"> • Simple obesity if refractory to treatment • Obesity due to endocrine disease or other pathology • Factors influencing the medical need to treat obesity • Degree of obesity • Regional distribution of adiposity (abdominal obesity) • Associated medical conditions.
Specific principles:	Diet: A calorie-restricted diet comprising 3 200–4 000 kJ/day may achieve a gradual weight reduction over a period, though the body will counteract this effect by lowering the metabolic rate. It must therefore be combined with an effective exercise programme. The energy deficit should not exceed 2 000–4 000 kJ/day unless the subject is under medical supervision.	A realistic anticipated rate of weight loss will be 0.5–1 kg per week, at most.

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Treatment guidelines: OBESITY (continued from previous page)

Management		Comments
	Exercise – moderate, initially under supervision	The beneficial effect of exercise alone in the treatment of obesity is controversial.
	Surgery may be considered.	Refer to specialist
Drug treatment	None recommended	

OSTEOPOROSIS

Treatment guidelines

Management		Comments
Non-drug treatment	<p>Adequate protein and calorie intake; Adequate calcium intake particularly in the young, in breast-feeding mothers and in the elderly. Daily requirements of calcium 1 000–1 500 mg per day, preferably obtained from the diet. Weight bearing exercise e.g. walking. Avoid excessive exercise. Avoid smoking and excessive alcohol. Avoid falls, especially in the elderly. Care should be taken when prescribing drugs which may impair concentration or cause postural hypotension. Hip replacement surgery indicated for hip fractures.</p>	<p>Referral criteria:</p> <ul style="list-style-type: none"> • For bone mass densitometry, • Laboratory, bone biopsy, • Guided by clinical signs, • Complications such as fractures, • Especially for the exclusion of serious underlying conditions.
Drug treatment First line:	<p>Hormone replacement therapy (HRT) Intact uterus (no hysterectomy) : Oestrogen/progestogen combination e.g. Norgestrel + estradiol, oral, 1 mg/ 2 mg daily</p> <p>Uterus absent (post hysterectomy): Ethinylestradiol, oral, 0.02 mg–0.05 mg daily OR Estradiol valerate, oral, 1–2 mg daily OR Oestrogen conjugated, oral, 0.625 mg–1.25 mg daily on a cyclical basis. Adjusted to a minimum effective dose in postmenopausal women.</p>	<p>In women with an intact uterus, combination therapy should be used to minimise the risk of uterine cancer. HRT should be continued for at least 10–15 years.</p>

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Treatment guidelines:- OSTEOPOROSIS (continued from previous page)

Management		Comments
Second line:	Calcium supplementation Calcium carbonate, oral, 500–1 000 mg daily	Preferably dietary before giving calcium supplementation.
	Bisphosphonates, e.g. Alendronic acid, oral, 10 mg daily	Only to be initiated by bone metabolism specialist. This may be indicated when absolute contraindications for oestrogens exist
	Anabolic steroids	Should be reserved for males and to be prescribed by a specialist only.
Prophylactic therapy:		Should be considered in patients on long-term oral corticosteroid therapy.

PITUITARY DISORDERS / HYPOPITUITARISM

Treatment guidelines

Management		Comments
Non-drug treatment	Surgical treatment may be required for removal of neoplasms.	Surgery is required for large tumours, pituitary apoplexy, and hormone secreting tumours not controlled on drugs.
Drug treatment	IV sodium chloride (with glucose if hypoglycaemic) Dextrose 5% in sodium chloride solution 0.9% with additional sodium chloride solution 0.9% until dehydration and hyponatraemia are corrected.	
Glucocorticoid deficiency:	Prednisone oral, 7.5 mg daily	These are average maintenance doses. Start these at least 1 day before starting thyroxine.
Thyroid deficiency:	Levothyroxine, oral, 50–200 micrograms daily	Titrate dose until FT4 concentration is within the high limits of normal and patient is clinically euthyroid
Gonadal hormone deficiency:	<p>Woman - as for post menopausal HRT Intact uterus (no hysterectomy): Oestrogen/progestogen combination e.g. Norgestrel + estradiol, oral, 1 mg/ 2 mg daily</p> <p>Uterus absent (post hysterectomy): Ethinylestradiol, oral, 0.02 mg–0.05 mg daily OR Estradiol valerate, oral, 1–2 mg daily OR Oestrogen conjugated, oral, 0.625 mg–1.25 mg daily</p> <p>Men: Testosterone, IM, 250 mg every 2–4 weeks</p>	<p>Judge doses on clinical response</p> <p>To be prescribed by a specialist only</p>

Treatment Guidelines:- PITUITARY DISORDERS / HYPOPITUITARISM

Management		Comments
Adrenal crisis:	Hydrocortisone, IV, 100 mg 6 hourly PLUS Dextrose 5% in sodium chloride solution 0.9% with additional sodium chloride solution 0.9% until dehydration and hyponatraemia are corrected	• Refer after stabilisation
Chronic:	Do diagnostic tests, if hypotensive: Sodium chloride solution 0.9%, IV infusion until normal hydration and normal chemistry PLUS Hydrocortisone, IV, 100 mg as a single dose in severe conditions.	

PITUITARY DISORDERS / PROLACTINOMA

Treatment guidelines

Management		Comments
Non-drug treatment	None	<p>Definition Pituitary problems present with abnormalities of function, structural abnormalities or a combination of both.</p> <p>Pathogenesis Tumours of pituitary infarction/haemorrhage. Prolactinoma is the most common pituitary tumour, usually microadenoma</p> <p>Referral criteria</p> <ul style="list-style-type: none"> • Large tumours, especially if there is evidence of compression of optic chiasm • Non response of prolactin levels • Pregnancy is planned • Pituitary apoplexy.
Drug treatment	Bromocriptine 1.25 mg at bedtime with snack. Increase doses to 2.5 mg twice a day with food (initial maintenance dose) and check prolactin 4 weeks later. Higher doses may be needed.	GIT side effects minimised by giving doses with food If total dose of 10 mg does not normalise prolactin – refer

THYROIDITIS

Treatment guidelines

Management		Comments
Non-drug treatment	None	Referral criteria <ul style="list-style-type: none"> • Uncertain diagnosis • Thyroid crisis • Severe disease
Drug treatment	Levothyroxine, oral, 50–150 micrograms daily for hypothyroidism Beta blockers for hyperthyroidism to control symptoms: Propranolol, oral, 20–40 mg 3 times daily NSAIDs for pain or inflammation (de Quervain's): Ibuprofen, oral, 600–1 200 mg/day in divided doses as needed.	For euthyroid subjects - monitor TSH, T4, annually Start with low doses

7. Genito-urinary system

7.1 Gynaecology

ABNORMAL UTERINE BLEEDING

Treatment guidelines

Management		Comments
Non-drug treatment	Surgical procedures as indicated D & C should be considered as a last resort in young women, but as first choice in women over 40 years of age.	Surgical procedures will be dictated by the diagnosis.
Drug treatment For restoring cyclicity:	Oestrogen and progestogen: Contraceptive pill (in younger women) OR Hormone replacement therapy: Oestrogen/progestogen combination therapy, e.g. Norethisterone + estradiol, oral, 1 mg/2 mg daily.	Where contraception is needed or for anovulatory dysfunctional bleeding or ovulatory dysfunctional bleeding
Anovulatory dysfunctional bleeding:	Progesterone only: 17-OH-progestogen, oral, 10 mg 3 times daily for 10 days, starting on day 14 OR Norethisterone, oral, 5 mg 3 times daily for 10 days, starting on day 14.	Every 3 weeks for restoring cyclicity (for 2–3 months)

Treatment Guidelines:- ABNORMAL UTERINE BLEEDING (continued from previous page)

Management		Comments
Dysfunctional bleeding:	Progestogen Norethisterone, oral, 5 mg 4 hourly for 24–48 hours OR Oestrogen Conjugated oestrogens, IV or IM, 25 mg repeat once if necessary after 6–12 hours OR	To terminate the bleeding in anovulatory dysfunctional bleeding. As soon as bleeding has stopped, reduce to 5 mg 3 times daily until 30 tablets in total have been taken. To terminate the bleeding in excessively heavy anovulatory dysfunctional bleeding. After bleeding has stopped, continue with a combined contraceptive tablet 3 times daily for 7 days.
Dysmenorrhoea and dysfunctional bleeding:	Ibuprofen, oral, 200–400 mg 3 times daily usually for 2–3 days	

ABORTION

Treatment guidelines

HABITUAL ABORTION		
Management		Comments
Non-drug treatment	Surgical procedures	
Drug treatment	As per specific diagnosis of underlying disease, in consultation with a gynaecologist Prednisone, oral, 5–10 mg daily OR Aspirin, soluble oral, 150 mg daily may be used.	Duration: until pregnancy has stabilised
BLIGHTED OVUM		
Management		Comments
Non-drug treatment	Counselling D & C	The uterus must be evacuated. The products of conception should be sent for histology
Drug treatment	None	
RETAINED ABORTION		
Management		Comments
Non-drug treatment	Counselling D & C	The uterus must be evacuated.
Drug treatment	None	

MIDTRIMESTER ABORTION (FROM 13–22 WEEKS GESTATION)		
Management		Comments
Non-drug treatment	Counselling Evacuation of the uterus Consider cervical cerclage in next pregnancy.	Referral criteria <ul style="list-style-type: none"> • Uterine congenital abnormalities • Severe cervical incompetence • Congenital anomalies of the fetus • Immunological problems • Diabetes mellitus • Parental genetic defects and SLE
Drug treatment	Oxytocin, IV, 20–40 milliunits/minute, adjusted as required	Dilute 20–40 IU in 1L of dextrose 5%. This gives a solution containing 20–40 milliunits/mL To aid uterine contraction
	Anti-D immunoglobulin, IM, 100 micrograms once	If mother is Rh-negative.
SEPTIC ABORTION		
Management		Comments
Non-drug treatment	Counselling Evacuation of uterus and surgical management of complications.	
Drug treatment	Antibiotics, e.g. Ampicillin, IV, 1 g immediately, followed by 500 mg 6 hourly PLUS Gentamicin, IV, 3–5 mg/kg as a bolus, followed by 1.5 mg/kg 8 hourly after defervescence IV ampicillin can be replaced with: Amoxicillin, oral, 500 mg 8 hourly PLUS Metronidazole, oral, 400 mg 8 hourly or, 500 mg per rectum 8 hourly if oral administration is unsuitable.	Duration: until cured, usually 10 days

TROPHOBLASTIC NEOPLASIA (MOLA HYDATIDOSA)		
Management		Comments
Non-drug treatment	Evacuation of uterus	Products of conception to be sent for histology Follow-up investigations such as: X-ray chest every 2 weeks Estimation of uterine size every 2 weeks Serial HCG value every 2 weeks
Drug treatment For expulsion of the mole and to control bleeding For continual contraception	Oxytocin IV, 20–40 milliunits/minute, adjusted as required Medroxyprogesterone acetate, IM, 150 mg every 3 months OR Combination oestrogen / progestogen tablets e.g. norgestrel + estradiol	Dilute 20–40 IU in 1L of dextrose 5%. This gives a solution containing 20–40 milliunits/mL Duration: for at least one year
THERAPEUTIC ABORTION		
Management		Comments
Non-drug treatment	Counselling. Surgical procedures according to the stage of pregnancy.	
Drug treatment	Oxytocin, IV, 20–40 milliunits/minute, adjusted as required	Dilute 20–40 IU in 1 L of dextrose 5%. This gives a solution containing 20–40 milliunits/mL

DYSMENORRHOEA

Treatment guidelines

Management		Comments
Non-drug treatment	Surgical treatment, hysterectomy may be indicated for severe secondary dysmenorrhoea LUNA (laparoscopic resection of utero-sacral ligaments) Presacral neurectomy	Referral Criteria <ul style="list-style-type: none"> • Young women with pain not responding to conventional treatment • Older women with persistent pain
Drug treatment Symptomatic relief	Paracetamol, oral, 500–1 000 mg up to 4 times daily OR Aspirin, soluble, oral, 300–600 mg 4 times daily is usually adequate OR Ibuprofen, oral, 200–400 mg 3 times daily for 2–4 days	
For severe pain:	Combination contraceptive hormonal therapy	

GENITAL PROLAPSE AND URINARY INCONTINENCE

Treatment guidelines

Management		Comments
Non-drug treatment	Surgical procedures as dictated by the diagnosis	Referral criteria <ul style="list-style-type: none"> • Recurrent prolapse • Advanced grade III prolapse • Urinary incontinence not responding to therapy • Complex or large vesico-vaginal fistulas • Ectopic ureters • Patients with systemic organ diseases or > 75 years of age.
Drug treatment	Infections, and underlying conditions, as appropriate and as dictated by the diagnosis Imipramine, oral, 25–50 mg 3 times daily	For detrusor hyperactivity demonstrated on urodynamic studies

INFERTILITY**Treatment guidelines**

Management		Comments
Non-drug treatment	Counselling Lifestyle modification Surgical procedures	
Drug treatment	As per underlying disease. Clomifene oral, 50 mg daily for 5 days	To be prescribed by a specialist only.

MENOPAUSE AND PERIMENOPAUSAL SYNDROME

Treatment guidelines

Management		Comments
Non-drug treatment	Counselling	Referral criteria <ul style="list-style-type: none"> • Premature menopause (under 40 years of age) • Severe complications, particularly severe osteoporosis • Management difficulties, e.g. where a contra-indication to oestrogen replacement therapy exists.
Drug treatment Hormone replacement therapy (HRT)	Intact uterus (no hysterectomy): Oestrogen/progestogen combination e.g. Norgestrel + estradiol, oral, 1 mg/2 mg daily Uterus absent (post hysterectomy): Ethinylestradiol, oral, 0.02 mg–0.05 mg daily OR Estradiol valerate, oral, 1–2 mg daily OR Oestrogen conjugated, oral, 0.625 mg–1.25 mg daily	Oestrogen supplementation to prevent postmenopausal osteoporosis requires long-term treatment and is not indicated in all postmenopausal women. Any unexpected vaginal bleeding is an indication for excluding endometrial carcinoma before treating further. Either use ultrasound (endometrial thickness) plus an endometrial biopsy or a D & C. The most important contraindication for HRT is a previous hormone dependent malignant tumour (breast or endometrium). Previous thromboembolism is a relative contraindication. In all these instances, consult with a specialist.

7.2 Obstetrics

ANAEMIA IN PREGNANCY

Treatment guidelines

Management		Comments
Non-drug treatment	Lifestyle adjustment to prevent nutritional deficiency	Referral criteria <ul style="list-style-type: none"> • Haemolysis or evidence of bone marrow suppression, • Cases not responding to treatment • Pancytopenia, • Sickle cell disease • Haemoglobinopathy
Drug treatment		
Prophylaxis:	Ferrous sulphate, oral, 200 mg daily. PLUS Folic acid, oral, 5 mg daily	Treat until Hb is normal. Hb is expected to rise by at least 0.2 g per week unless diagnosis is incorrect. Associated vitamin deficiencies should be identified and treated accordingly. Iron and folic acid supplementation should be continued during lactation. Other causes of anaemia should be treated according to the diagnosis.
Treatment of folic acid deficiency:	Folic acid oral, 5 mg daily.	
Treatment of iron deficiency:	Ferrous sulphate, oral, 200 mg 2–3 times daily until cure	

DIABETES MELLITUS AND GLUCOSE INTOLERANCE IN PREGNANCY

Treatment guidelines

Management		Comments
Non-drug treatment	See diabetes mellitus (page 125)	
Drug treatment	<p>Insulin:</p> <p>Very rapid acting: Onset of action: 10 min, peak action: 1 hour, duration of action: 3 hours; injections daily, immediately prior to meals.</p> <p>Short-acting: onset of action: 30 min, peak action: 2–5 hours, duration of action: 5–8 hours, injections daily, 30 minutes prior to meals.</p> <p>Intermediate-acting: Onset of action: 1–3 hours, peak action: 6–12 hours, duration of action 16–24 hours, injections: once or twice daily.</p> <p>Biphasic mixtures, e.g. 30/70, onset of action: 30 min, peak action: 2–12 hours, duration of action: 16–24 hours, Injections: once or twice daily.</p>	
During labour:	<p>Serum glucose should be monitored at short intervals, (preferably half hourly.)</p> <p>Short-acting insulin is administered to maintain physiological blood glucose levels.</p> <p>The postpartum insulin requirements decrease rapidly. During the first 48 hours blood sugar levels are maintained by regular short-acting insulin administration.</p>	<p><u>The newborn</u> is at risk of hypoglycaemia (very common), respiratory distress, hyperbilirubinaemia, and congenital abnormalities.</p> <p><u>Postpartum contraception:</u> Sterilisation should be considered. In well-controlled cases a low-dose combined contraceptive pill is allowed. If the control is unstable, a progesterone-only preparation or intra-uterine device is acceptable.</p>

HEART DISEASE IN PREGNANCY

Treatment guidelines

Management		Comments
Non-drug treatment	Should be referred	During labour the load on the heart is particularly high and any increased load should be prevented. Sterilisation should be considered in a patient with a heart valve lesion after her second baby. Patients having had serious complications during pregnancy should not become pregnant again. A heart valve prosthesis must be considered a contraindication to pregnancy.
Drug treatment Anticoagulation:	First trimester: Heparin, IV, 5 000 IU as a bolus, followed by 1 000–1 200 IU/hour as an infusion OR Heparin, SC, 5 000 IU twice daily (prophylaxis) Second trimester: Warfarin, oral, 5 mg daily Third trimester: Heparin, IV, 5 000 IU as a bolus, followed by 1 000–1 200 IU/hour as an infusion OR Heparin, SC, 5 000 IU twice daily, (prophylaxis)	Control dose with APPT to keep it 1.5–twice normal. Control with INR to keep within the therapeutic range. Control dose with APPT to keep it 1.5–twice normal.

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Treatment Guidelines:- HEART DISEASE IN PREGNANCY (continued from previous page)

Management		Comments
Prophylactic antibiotics	<p>Prophylactic antibiotics against infective endocarditis are indicated in all patients with valvular heart disease and with prosthetic valves: Ampicillin IM or IV, 2 g immediately with onset of labour PLUS Gentamicin IM or IV, 3 mg/kg during active labour FOLLOWED BY Ampicillin IV, 1 g after 8 hours PLUS Gentamicin, IV, 1.5 mg/kg after 8 hours of active labour and a final dose 6 hours postpartum</p> <p>for penicillin-allergic patients: Vancomycin IV, 1 g over 1 hour PLUS Gentamicin as above</p>	
Minor non-gynaecological or non-uological procedures during pregnancy:	<p>Amoxicillin, oral, 3 g 1 hour before procedure and 1.5 g 6 hours later</p> <p>for penicillin-allergic patients: Clindamycin, oral, 600 mg 1 hour before procedure and 300 mg 6 hours later</p>	

HYPEREMESIS GRAVIDARUM

Treatment guidelines

Management		Comments
Non-drug treatment	Counselling Lifestyle adjustment Restrict oral intake for 24-48 hours, but ensure adequate hydration.	Referral criteria <ul style="list-style-type: none"> • Cases responding poorly to treatment. • Severe complicated cases. • If diagnosis is in doubt.
Drug treatment	IV fluids	Correct electrolyte imbalance.
	Metoclopramide, oral, 10 mg 6 hourly as needed If vomiting is severe Metoclopramide, IV, 10 mg 6 hourly	
	For sedation: Promethazine, IM, 25 mg 8 hourly or oral, 25–50 mg	

HYPERTENSION IN PREGNANCY

Treatment guidelines

Management		Comments
Non-drug treatment	<p>Lifetsyle modification Exercise Fetal surveillance by SFH growth carefully monitored and antepartum fetal heart monitoring weekly after 28–40 weeks Induction of labour is usually unnecessary, but should be considered in cases with BP persistently $\geq 160/110$ mm Hg, pregnancy of 37 weeks duration or more, or in the presence of maternal or fetal compromise (eg. poor SFH growth, oligohydramnios, etc.)</p>	<p>Referral criteria</p> <ul style="list-style-type: none"> • Severe hypertension (over 160/110 mm Hg), • Complications, e.g. heart failure, pulmonary oedema, etc. • Imminent delivery with a fetus possibly requiring neonatal intensive care after birth. • Development of persistent proteinuria before 28 weeks.
Drug treatment	<p>Hydrochlorothiazide, oral, 12.5 mg daily to be continued if used prior to pregnancy. Diuretics in general are contraindicated and high dose diuretics should not be used</p> <p>Methyldopa, oral, 250 mg twice daily, increase to 500 mg 3 times daily (max. 1500 mg per day) AND/OR Hydralazine, oral, 25 mg 3 times daily, increase to 50 mg 4 times daily AND/OR Prazosin, oral, 1–5 mg 3 times daily (initiate with 0.5 mg test dose and observe for first dose hypotensive effect) PLUS Aspirin, soluble, oral, 75 mg daily may be used.</p>	<p>Drug treatment will be dictated by blood pressure response. Monitor progress until a stable result is achieved.</p> <p>Especially if pre-eclampsia in a previous pregnancy, in chronic hypertension or severe hypertension.</p>

Treatment Guidelines:- HYPERTENSION IN PREGNANCY (continued from previous page)

Management		Comments
Hypertensive emergency:	Hydralazine, oral, 25 mg every half-hour if needed until diastolic blood pressure <110 mmHg. OR Dihydralazine, IM or IV, 6.25 mg every 30–60 minutes if needed. Direct observation is essential.	

JAUNDICE IN PREGNANCY**Treatment guidelines**

Management		Comments
Non-drug treatment	As per condition	Jaundice associated with pregnancy may be due to one of the following: <ul style="list-style-type: none"> • Intrahepatic cholestasis of pregnancy, • Acute fatty liver of pregnancy (acute yellow atrophy of the liver), • As a result of severe pre-eclampsia or eclampsia, • As a result of hyperemesis gravidarum. Non-pregnancy dependent jaundice can be due to other causes.
Drug treatment	As per condition	

LABOUR INDUCTION

Treatment guidelines

Management		Comments
Non-drug treatment	Reassurance	
Drug treatment	<p>If induction is medically indicated: Oxytocin, IV, 1–2 milliunits/minute. Titrate dose to achieve desired response</p> <p>Dinoprostone tablets, intravaginally 0.5–1 mg,</p>	<p>Dilute oxytocin 1 IU in 1 litre dextrose 5% to make a solution of 1 milliunit/mL</p> <p>To be prescribed by a gynaecologist only</p>

LABOUR PAIN, SEVERE

Treatment guidelines

Management		Comments
Non-drug treatment	<p>Antenatal counselling Psychological support Episiotomy, instrumental assistance, regional blocks</p>	
Drug treatment	<p>Pethidine, IM, 50–100 mg immediately, may be repeated at 4–6 hourly intervals during the second stage of labour.</p> <p>Regional anaesthetic, epidural anaesthesia or caudal block with e.g. bupivacaine without adrenaline. Do not exceed 2 mg/kg (maximum 150 mg) in any 4 hourly period, or 400 mg in 24 hours.</p> <p>Perineal analgesia is achieved by infiltration with: Lidocaine, 1% or 2%, locally or by a pudendal block.</p>	<p>Postpartum and post-episiotomy pain may be managed by pethidine as appropriate.</p>

POSTPARTUM FEVER

Treatment guidelines

Management		Comments
Non-drug treatment	Prevention of deep vein thrombosis Complete evacuation of uterine contents Hysterectomy may be indicated. Attention to breast engorgement.	During delivery the woman's protective barrier against infections is temporarily reduced and this may lead to infections The cause of fever may be a serious complication and is often preventable.
Drug treatment	Antibiotic treatment, where appropriate, should be guided by the presumed source of infection. Empiric therapy consists of: Ampicillin, IV, 1 000 mg immediately, followed by 500 mg IV 6 hourly PLUS Metronidazole, oral, 400 mg 8 hourly OR rectal, 500 mg 8–12 hourly PLUS Gentamicin, IV, 3–5 mg/kg bolus followed by 1.5 mg/kg every 8 hours. After defervescence, IV ampicillin can be changed to: Amoxicillin, oral, 500 mg 8 hourly	Treat until cure is evident clinically and by laboratory tests.

PRE-ECLAMPSIA/ECLAMPSIA SYNDROME

Treatment guidelines

Management		Comments
Non-drug treatment	Bed rest, preferably in hospital, lifestyle adjustment, diet Monitor BP, urine output, renal function tests, platelet count and fetal condition. Consider termination of pregnancy when indicated.	Referral criteria • Severe pre-eclampsia, complicated pre-eclampsia (organ failure, fetal complications), imminent eclampsia and eclampsia.
Drug treatment Pre-eclampsia:	Antihypertensive treatment if diastolic blood pressure > 100 mm Hg Hydrochlorothiazide, oral, 12.5 mg daily to be continued if used prior to pregnancy. Diuretics in general are contraindicated and high dose diuretics should not be used Methyldopa, oral, 250 mg twice daily, increase to 500 mg 3 times daily (max. 1500 mg per day) AND/OR Hydralazine, oral, 25 mg 3 times daily, increase to 50 mg 4 times daily AND/OR Prazosin, oral, 1–5 mg 3 times daily (initiate with 0.5 mg test dose and observe for first dose hypotensive effect) PLUS Aspirin, soluble, oral, 75 mg daily may be used, especially if pre-eclampsia in a previous pregnancy, in chronic hypertension or severe hypertension Addition and titration of drugs depends on blood pressure response. Monitor progress until a stable result is achieved.	Ergot-containing drugs are contraindicated in hypertensive patients (including pre-eclampsia) following delivery of the baby. Oxytocin 5–10 IU is given as a bolus IM or IV instead, once. Pre-eclamptic and eclamptic patients are hypovolaemic (particularly when the haematocrit exceeds 40%). Consequently, hypotension is a risk during anaesthesia. Careful transfusion of IV fluids is important, guided by a well-functioning CVP-catheter. Blood-loss at caesarean section should be limited. Generally, an epidural block is contraindicated in pre-eclamptic patients on account of hypovolaemia. However, with careful fluid transfusion prior to the block and by limiting the dose of bupivacaine, an epidural block may be applied by an experienced person. Assisted delivery is advocated to prevent the patient from bearing down.

Continued:

Treatment Guidelines:- PRE-ECLAMPSIA/ECLAMPSIA SYNDROME (continued from previous page)

Management		Comments
Eclampsia:	Magnesium sulphate, IV infusion, 4 g in 250 mL dextrose 5% (or sodium chloride solution 0.9%) at a rate not exceeding 3 mL per minute	This treatment is recommended for: Imminent eclampsia Eclampsia Severe pre-eclampsia, particularly in the presence of complications
	Calcium gluconate 10%, IV, 10 mL given slowly at a rate not exceeding 5 mL per minute	Check knee reflexes, and if absent, give calcium gluconate
	Dihydralazine, IV, 0.625 mg every half hour until diastolic blood pressure <100 mm Hg.	Diastolic blood pressure \geq 120 mm Hg (short term treatment for hypertension)

PRETERM LABOUR AND PRETERM RUPTURE OF MEMBRANES

Treatment guidelines

Management		Comments
Non-drug treatment	A fetus estimated to be <1 000 g (ultrasound) is usually managed expectantly because the prognosis is extremely poor. If the fetus weighs between 1 000 and 1500 g the mother may be referred as a caesarean section is often indicated. The fetus may be delivered by a non-specialist if it weighs more than 1 500 g.	Prepare for appropriate care of preterm infant. Referral criteria <ul style="list-style-type: none"> • A fetus requiring neonatal intensive care: weight <1 500 g or gestation less than 34 weeks. • A fetus requiring specialised treatment after birth, e.g. surgery. • Severely ill mother.
Drug treatment	Prednisone, oral, 60 mg for 2 days initially, and then once weekly from weeks 28–33. This is indicated when the duration of pregnancy is 28–32 weeks.	To improve fetal lung maturity.
Drugs used in the acute suppression of labour include:	Beta-adrenergic stimulants, e.g. Hexoprenaline, IV, 5–10 micrograms immediately, over 10 minutes, followed by an infusion of 300 micrograms/1 000 mL half-strength Darrows in dextrose solution 5%. Give 0.3 micrograms/minute, up to 0.45 micrograms/minute PLUS Indometacin rectally, 100 mg as a single dose	The maternal pulse should be maintained at 100 plus per minute.
	Amoxicillin, oral, 500 mg 8 hourly PLUS Metronidazole, oral, 400 mg 8 hourly for 10 days.	May be used, especially after suspected or proven premature rupture of membranes.