Chattisgarh Drug Formulary 2016-supplement

New Drugs included in 2016 Essential Drugs List

Colour Code

 EDL-Tertiary restricted

 EDL-Tertiary

 EDL-Secondary

 EDL Primary

 EDL Universal

SECTION - 1
ANAESTHETICS
No new drugs

Section 2. ANALGESICS, ANTIPYRETICS, NONSTEROIDAL ANTI-INFLAMMATORY MEDICINES (NSAIDS),

ACECLOFENAC
EDL-Tertiary restricted 

INDICATIONS

Pain and inflammation in rheumatoid arthritis, osteoarthritis and ankylosing spondylitis

CONTRAINDICATIONS

Porphyria; avoid injections containing benzyl alcohol in neonates; history of gastric ulcers, bleeding or perforation.

Additional contraindications include concomitant NSAID or anticoagulant use

(including low-dose heparin); history of haemorrhagic diathesis; history of confirmed or suspected cerebrovascular bleeding; operations with high risk of haemorrhage; history of asthma; moderate or severe renal impairment; hypovolaemia; dehydration.

PRECAUTIONS

NSAIDs should be used with caution in the elderly (risk of serious side-effects and fatalities); interactions (Appendix 6a, 6c, 6d); pregnancy (Appendix 7c); patients with coagulation disorders; hepatic, renal and cardiac impairment; history of gastrointestinal lesions.

ADVERSE EFFECTS

Injection site reactions; transient epigastric pain, risk of thrombotic events; toxic epidermal necrolysis; Abnormality in kidney function.

Storage Store protected from light.
Dose
100 mg twice daily; CHILD not recommended Tablets, f/c, aceclofenac 100 mg,

BUPRENORPHINE
EDL-Tertiary
INDICATIONS
Buprenorphine has both opioid agonist and antagonist properties and may precipitate withdrawal symptoms, including pain, in patients dependent on other opioids. It has abuse potential and may itself cause dependence. It

has a much longer duration of action than morphine and sublingually is an effective analgesic for 6 to 8 hours. Unlike most opioid analgesics, the effects of buprenorphine are only partially reversed by naloxone.

PRECAUTIONS
impaired consciousness; effects only partially reversed by naloxone
Fever or external heat Monitor patients using patches for increased side-effects if fever present (increased absorption possible); avoid exposing application site to external heat (may also increase absorption)
Contra-indications Buprenorphine may antagonise the analgesic effect of previously administered opioids and is generally not recommended.
ADVERSE-EFFECTS
Can induce mild withdrawal symptoms in patients dependent on opioids; also diarrhoea, abdominal pain, anorexia, dyspepsia; vasodilatation; dyspnoea; paraesthesia, asthenia, fatigue, agitation, anxiety; less commonly flatulence, taste disturbance, angina, hypertension, syncope, hypoxia, wheezing, cough, restlessness, depersonalisation, dysarthria, impaired memory, hypoaesthesia, tremor, influenza-like symptoms, pyrexia, rhinitis, rigors, muscle cramp, myalgia, tinnitus, dry eye, and dry skin; rarely paralytic ileus, dysphagia, impaired concentration, and psychosis; very rarely retching, hyperventilation, hiccups, and muscle fasciculation
Dose
Moderate to severe pain, by sublingual administration, 200–400 micrograms every 6–8 hours;

CHILD
over 6 years, 16–25 kg, 100 micrograms every 6–8 hours; 25–37.5 kg, 100–200 micrograms every 6–8 hours; 37.5–50 kg, 200–300 micrograms every 6–8 hours
By intramuscular or slow intravenous injection, 300–600 micrograms every 6–8 hours; CHILD over 6 months 3–6 micrograms/kg every 6–8 hours (max. 9 micrograms/kg)
Premedication, by sublingual administration, 400 micrograms Patches
Patches, self-adhesive, beige, buprenorphine, ‘5’ patch (releasing 5 micrograms/hour for 7 days), net price 2 = £9.16; ‘10’ patch (releasing 10 micrograms/ hour for 7 days), 4 = £33.32; ‘20’ patch (releasing 20 micrograms/hour for 7 days), 4 = £60.68. Label: 2
Dose severe chronic pain unresponsive to non-opioid analgesics,
ADULT over 18 years, initially one ‘5 micrograms/hour’ patch; apply to dry, non-irritated, non-hairy skin on upper torso, removing after 7 days and siting replacement patch on a different area (avoid same area for at least 3 weeks)

Section 3. ANTIALLERGICS AND MEDICINES USED IN ANAPHYLAXIS

DEFLAZACORT
EDL-Tertiary restricted 
INDICATIONS
Suppression of inflammatory and allergic disorders
DOSE
Usual maintenance 3–18 mg daily (acute disorders, initially up to 120 mg daily); see also Administration (above)
CHILD 0.25–1.5 mg/kg daily (or on alternate days); see also Administration (above)
Tablets, deflazacort 6 mg, net

BUDESONIDE
EDL- Tertiary

INDICATIONS
Nasal allergy, prophylaxis and treatment of seasonal and perennial allergic or vasomotor rhinitis, nasal polyposis, asthma.
AVAILABILITY
INHALER 100 and 200 µg, **ROTACAP** 100, 200 and 400 µg, **NASAL SPRAY** 0.02% w/v.
DOSE
Asthma
Adult- 200-400 µg Meter Dose Inhaler twice daily by inhalation, as dry powder inhaler 200-800 µg in single or two divided doses, as nebulised solution 0.5-1 mg twice daily.
Child- 50-400 µg Meter Dose Inhaler twice daily, as nebulised solution 0.25-0.5 mg twice daily.
Nasal polyps and allergic rhinitis:
200-400 µg/day by intranasal spray.
CONTRAINDICATIONS
Hypersensitivity; presence of infections or
nasal ulcers.
PRECAUTIONS
Paradoxical bronchospasm; children, elderly,
pregnancy (Appendix 7c), lactation; active or quiescent tuberculosis, interactions (Appendix 6c).
ADVERSE EFFECTS Inhalation leads to hoarseness of voice, opportunistic fungal infection in oropharynx, respiratory infection, headache.

Section 5. ANTICONVULSANTS/ANTIEPILEPTICS

Pregabalin
EDL-Tertiary restricted 

INDICATIONS Peripheral and central neuropathic pain; adjunctive therapy for partial seizures with or without secondary generalisation; generalised anxiety disorder
PRECAUTIONS

Avoid abrupt withdrawal (taper over at least 1 week); severe congestive heart failure; renal impairment (Appendix 3); pregnancy (Appendix 4)
CONTRA-INDICATIONS

Breast-feeding (Appendix 5)
ADVERSE EFFECTS

Dry mouth, constipation, nausea, vomiting, flatulence; oedema; dizziness, drowsiness, irritability, attention disturbance, disturbances in muscle control and movement, memory impairment, paraesthesia, euphoria, confusion, fatigue, appetite changes, weight gain; changes in sexual function; visual disturbances and ocular disorders (including blurred vision, diplopia, eye strain and eye irritation); less commonly abdominal distension, increased salivation, gastro-oesophageal reflux disease, taste disturbance, thirst, hot flushes, tachycardia, syncope, dyspnoea, chest tightness, nasal dryness, stupor, depersonalisation, depression, insomnia, abnormal dreams, hallucinations, agitation, mood swings, panic attacks, asthenia, speech disorder, dysuria, urinary incontinence, thrombocytopenia, joint swelling, muscle cramp, myalgia, arthralgia, sweating, and rash; rarely ascites, dysphagia, pancreatitis, hypotension, hypertension, cold extremities, first-degree AV block, arrhythmia, bradycardia, nasopharyngitis, cough, epistaxis, rhinitis, parosmia, pyrexia, rigors, disinhibition, weight loss, hypoglycaemia or hyperglycaemia, renal failure, menstrual disturbances, breast pain, breast discharge, breast hypertrophy, neutropenia, rhabdomyolysis, hyperacusis, hypokalaemia, and leucocytosis; diarrhoea, congestive heart failure, angioedema, loss of consciousness, headache, Stevens- Johnson syndrome, and pruritus also reported
Dose

Neuropathic pain, ADULT over 18 years, initially 150 mg daily in 2–3 divided doses, increased if necessary after 3–7 days to 300 mg daily in 2–3 divided doses, increased further if necessary after 7 days to max. 600 mg daily in 2–3 divided doses Epilepsy,

ADULT over 18 years, initially 25 mg twice daily, increased at 7-day intervals in steps of 50 mg daily to 300 mg daily in 2–3 divided doses, increased
further if necessary after 7 days to max. 600 mg daily in 2–3 divided doses
Generalised anxiety disorder,
ADULT over 18 years,
initially 150 mg daily in 2–3 divided doses, increased if necessary at 7-day intervals in steps of 150 mg daily; max. 600 mg daily in 2–3 divided doses.

Clobazam
EDL- Tertiary
INDICATIONS *Add-on for refractory partial, complex and generalized seizures, add-on in West syndrome, LGS, myoclonic epilepsy, absence seizures, to cover short period of increased seizure susceptibility addition of new AED examinations overnight travel catamenial epilepsy, intermittent prophylaxis in febrile seizures.*
AVAILABILITY
TABLETS 5, 10 and 20 mg.
DOSE
Oral
0.3-2.9 mg/kg/day, (average 1 mg/kg/day) single at bed time or twice daily dose.
PRECAUTIONS Pregnancy (Appendix 7c), interactions (Appendix 6c).
ADVERSE EFFECTS
Sedation, dizziness, hyperactivity, behavioural
problem, irritability, drooling, weight gain, sleep disturbance, blurring, diplopia.

Piperacillin + Tazobactam
EDL- Tertiary
INDICATIONS Nosocomial pneumonia, infections following burns, urinary tract infections.
Availability
INJECTIONS
Piperacillin 4g +Tazobactam 0.5g
Piperacillin 2g + Tazobactam 0.25g,
Piperacillin 1g +Tazobactam 0.0125g.
DOSE
4.5g (Piperacillin 4g + Tazobactam 0.5g) every 6 h for 7-14 days.

CONTRAINDICATIONS
Hypersensitivity to penicillins.
PRECAUTIONS

Pregnancy (Appendix 7c), lactation; prolonged treatment may increase super infections, interactions (Appendix 6c).

ADVERSE EFFECTS

Hypersensitivity reactions like rash, fever, bronchospasm, vasculitis, serum sickness, exfoliative dermatitis, Steven's Johnson syndrome, and anaphylaxis.

STORAGE

Store below 25^0 C.

Levetiracetam

EDL- Tertiary

INDICATIONS *Good effect difficult-to-treat idiopathic focal epilepsies of childhood, including variations such as continuous spike and wave during sleep or Landau-Kleffner syndrome (LKS), photosensitivity and myoclonus-Generalised epilepsy with photosensitivity, idiopathic epilepsy– control of GTCS and Myoclonic, treatment of postanoxic and post-encephalitic myoclonic epilepsy, epileptic encephalopathies- LGS, West Syndrome, severe myoclonic epilepsy, absence seizure, rolandic epilepsy.*

AVAILABILITY

TABLETS 250, 500 and 750 mg, **SYRUP** 100 mg/ ml, **INJECTION** 5 ml ampoule (100 mg/ml).

DOSE

Oral

Initial dose- 10-20 mg/kg/day, increase by 10 mg/kg/day every 1-2 week upto 40-60 mg/kg/ day in two divided doses.

Intravenous injection

20-30 mg/kg at the rate of 5 mg/kg/min.

CONTRAINDICATIONS

Hypersensitivity.

PRECAUTIONS

Renal disease; pregnancy (Appendix 7c).

ADVERSE EFFECTS

Most frequent somnolence, asthenia (dose dependent); headache, hair loss, vertigo, nausea, infection; behavioral changes such as hostility aggression, apathy, anxiety, depression, psychosis.

Section 6. ANTI INFECTIVE DRUGS

Piperacillin + Tazobactam
EDL-Tertiary
INDICATIONS

Nosocomial pneumonia, infections following burns, urinary tract infections.

AVAILABILITY
INJECTIONS Piperacillin 4g +Tazobactam
0.5g Piperacillin 2g + Tazobactam 0.25g,
Piperacillin 1g +Tazobactam 0.0125g.
Dose 4.5g (Piperacillin 4g + Tazobactam 0.5g) every 6 h for 7-14 days.
CONTRAINDICATIONS

Hypersensitivity to penicillins.

PRECAUTIONS

Pregnancy (Appendix 7c), lactation; prolonged treatment may increase super infections, interactions (Appendix 6c).

ADVERSE EFFECTS

Hypersensitivity reactions like rash, fever, bronchospasm, vasculitis, serum sickness, exfoliative dermatitis, Steven's-Johnson syndrome, and anaphylaxis.

STORAGE

Store below 25^0 C.

Linezolid
EDL-Tertiary

Linezolid, an oxazolidinone antibacterial, is active against Gram-positive bacteria including meticillinresistant Staphylococcus aureus (MRSA), and vancomycin- resistant enterococci. Resistance to linezolid can develop with prolonged treatment or if the dose is less than that recommended. Linezolid is an option if a glycopeptide, such as vancomycin, cannot be used to treat pneumonia or severe skin and soft-tissue infections caused by MRSA. Linezolid is not active against Gramnegative organisms and must be given with other antibacterials
if the infection also involves Gram-negative organisms (the combination should be used for mixed skin and soft tissue infections only when other treatments are not available). A higher incidence of blood disorders and optic neuropathy have been reported in patients receiving linezolid for more than the maximum recommended duration of 28 days.

INDICATIONS

Pneumonia, complicated skin and softtissue infections caused by Gram-positive bacteria (initiated under expert supervision)

PRECAUTIONS

Monitor full blood count (including platelet count) weekly (see also CSM Advice below); history of seizures; unless close observation and blood-pressure monitoring possible, avoid in uncontrolled hypertension, phaeochromocytoma, carcinoid tumour, thyrotoxicosis, bipolar depression, schizophrenia, or acute confusional states; hepatic impairment (Appendix 2); renal impairment (Appendix 3); pregnancy (Appendix 4); interactions: Appendix 1 (MAOIs)

CONTRA-INDICATIONS

Breast-feeding (Appendix 5); see also Monoamine oxidase inhibition above

ADVERSE EFFECT

Diarrhoea (antibiotic-associated colitis reported), nausea, vomiting, taste disturbances; headache; less commonly thirst, dry mouth, glossitis, stomatitis, tongue discoloration, abdominal pain,
dyspepsia, gastritis, constipation, pancreatitis, hypertension, fever, fatigue, dizziness, insomnia, hypoaesthesia, paraesthesia, tinnitus, polyuria, anaemia, leucopenia, thrombocytopenia, eosinophilia,
electrolyte disturbances, blurred vision, rash, pruritus, diaphoresis, and injection-site reactions; very rarely transient ischaemic attacks, renal failure, pancytopenia and Stevens-Johnson syndrome; also reported
convulsions, lactic acidosis; peripheral and optic neuropathy reported on prolonged therapy (see also CHM advice above)
Dose
By mouth, 600 mg every 12 hours usually for 10–14 days (max. duration of treatment 28 days); CHILD [unlicensed] 1 week–12 years, 10 mg/kg every 8 hours; 12–18 years, adult dose
. By intravenous infusion over 30–120 minutes,600 mg every 12 hours; CHILD [unlicensed] 1 week– 12 years, 10 mg/kg every 8 hours; 12–18 years, adult dose
Tablets, f/c, linezolid 600 mg,
Suspension, yellow, linezolid 100 mg/5 mL when reconstituted with water,
Excipients include aspartame 20 mg/5mL (section 9.4.1)
Intravenous infusion, linezolid 2 mg/mL, net price 300-mL Excipients include Na 5 mmol/300-mL bag, glucose 13.71 g/300-mL Bag

Colistin
EDL-Tertiary
INDICATIONS
The polymyxin antibiotic, colistin, is active against Gram-negative organisms including Pseudomonas aeruginosa, Acinetobacter baumanii, and Klebsiella pneumoniae. It is not absorbed by mouth and thus needs to be given by injection for a systemic effect. Intravenous administration of colistin should be reserved for Gramnegative infections resistant to other antibacterials; its major adverse effects are dose-related neurotoxicity and nephrotoxicity.
PRECAUTIONS
renal impairment (Appendix 3); acute porphyria (section 9.8.2); risk of bronchospasm on inhalation— may be prevented or treated with a selective beta agonist; interactions: Appendix 1 (polymyxins)
CONTRA-INDICATIONS
myasthenia gravis; pregnancy (Appendix 4); breast-feeding (Appendix 5)
ADVERSE EFFECTS
neurotoxicity reported especially with excessive doses (including apnoea, perioral and peripheral paraesthesia, vertigo; rarely vasomotor instability, slurred speech, confusion, psychosis, visual disturbances); nephrotoxicity; hypersensitivity reactions including rash; injection-site reactions; inhalation may cause sore throat, sore mouth, cough, bronchospasm
DOSE
. By mouth, bowel sterilisation, 1.5–3 million units every 8 hours
. By slow intravenous injection into a totally implantable venous access device, or by intravenous infusion (but see notes above), ADULT and CHILD body-weight under 60 kg, 50 000– 75 000 units/kg daily in 3 divided doses; bodyweight over 60 kg, 1–2 million units every 8 hours
Note Plasma concentration monitoring required in neonates, renal impairment, and in cystic fibrosis; recommended ‘peak’ plasma-colistin concentration (approx. 30 minutes after intravenous injection or infusion) 10–15 mg/litre (125– 200 units/mL)
. By inhalation of nebulised solution, ADULT and CHILD
over 2 years, 1–2 million units every 12 hours; CHILD under 2 years, 0.5–1 million units every 12 hours
Tablets, scored, colistin sulphate 1.5 million units. Net price 50 = £58.28
Syrup, colistin sulphate 250 000 units/5mL when reconstituted with water. Net price 80 mL = £3.48
Injection, powder for reconstitution, colistimethate sodium (colistin sulphomethate sodium). Net price 500 000-unit vial = £1.14; 1 million-unit vial = £1.68; 2 million-unit vial = £3.09
Electrolytes (before reconstitution) Na <0.5 mmol/500 000-unit, 1 million-unit, and 2 million-unit vial

CASPOFUNGIN
EDL-Tertiary
INDICATIONS
Invasive aspergillosis either unresponsive to amphotericin or itraconazole or in patients intolerant of amphotericin or itraconazole; invasive candidiasis (see notes above); empirical treatment of systemic fungal infections in patients with neutropenia
PREAUTIONS
Hepatic impairment (Appendix 2); pregnancy (Appendix 4); interactions: Appendix 1 (caspofungin)
CONTRA-INDICATIONS
Breast-feeding (Appendix 5)
ADVERSE EFFECTS
Nausea, vomiting, abdominal pain, diarrhoea; tachycardia, flushing; dyspnoea; fever, headache; anaemia, decrease in serum potassium, hypomagnesaemia; rash, pruritus, sweating; injection-site reactions; less commonly hypercalcaemia; also reported, hepatic dysfunction, oedema, adult respiratory distress syndrome, hypersensitivity reactions (including anaphylaxis)
DOSE
By intravenous infusion, ADULT over 18 years, 70 mg on first day then 50 mg once daily (70 mg once daily if body-weight over 80 kg)
Intravenous infusion, powder for reconstitution, caspofungin (as acetate), net price 50-mg vial = £327.67; 70-mg vial = £416.78

LEVOFLOXACIN
EDL-Tertiary restricted 

INDICATIONS
see under Dose
PRECAUTIONS
see notes above; predisposition to QT interval prolongation (including cardiac disease, congenital long QT syndrome, electrolyte disturbances, concomitant use with other drugs known to prolong QT interval); interactions: Appendix 1 (quinolones)
Driving May impair performance of skilled tasks (e.g. driving)

ADVERSE-EFFECTS

see notes above; also flatulence, constipation; rarely tachycardia; very rarely pneumonitis, peripheral neuropathy, and hypoglycaemia; also reported, rhabdomyolysis and potentially life-threatening hepatic failure; local reactions and transient hypotension reported with infusion

Dose

By mouth, acute sinusitis, 500 mg daily for 10–14 days

Exacerbation of chronic bronchitis, 250–500 mg daily for 7–10 days

Community-acquired pneumonia, 500 mg once or twice daily for 7–14 days

Urinary-tract infections, 250 mg daily for 7–10 days (for 3 days in uncomplicated infection)

Chronic prostatitis, 500 mg once daily for 28 days

Skin and soft tissue infections, 250 mg daily or 500 mg once or twice daily for 7–14 days

By intravenous infusion (over at least 60 minutes for 500 mg), community-acquired pneumonia, 500 mg once or twice daily

Complicated urinary-tract infections, 250 mg daily, increased in severe infections Skin and soft tissue infections, 500 mg twice daily

Section 7. ANTIMIGRAINE MEDICINES

CLONIDINE HYDROCHLORIDE
EDL-Tertiary
INDICATIONS
Prevention of recurrent migraine (but see notes above), vascular headache, menopausal flushing; hypertension (section 2.5.2)
PRECAUTIONS
depressive illness, concurrent antihypertensive therapy; acute porphyria (section 9.8.2); interactions: Appendix 1 (clonidine)
ADVERSE-EFFECTS
Dry mouth, sedation, dizziness, nausea, nocturnal restlessness; occasionally rashes
DOSE
50 micrograms twice daily, increased after 2 weeks to 75 micrograms twice daily if necessary; CHILD not recommended
Tablets, clonidine hydrochloride 25 micrograms. Tablets, blue, s/c, clonidine hydrochloride 25 micrograms.

Section 8. ANTINEOPLASTIC, IMMUNOSUPPRESSIVES AND MEDICINES USED IN PALLIATIVE CARE

Dacarbazine

EDL-Tertiary restricted 

Dacarbazine, thought to act as an alkylating drug, is a component of a regimen for Hodgkin's disease. It is also used in the palliative therapy of metastatic malignant melanoma. Its major toxic effects are myelosuppression and intense nausea and vomiting. **(National drug formulary-2011)**

Dacarbazine is used to treat metastatic melanoma and,
in combination therapy, soft tissue sarcomas. It is also a
component of a commonly used combination for Hodgkin's disease (ABVD—doxorubicin [previously Adriamycinc], bleomycin, vinblastine, and dacarbazine). It is given intravenously. The predominant side-effects are myelosuppression and severe nausea and vomiting. **(BNF57)**

Arsenic trioxide

EDL-Tertiary restricted 

INDICATIONS

Arsenic trioxide is licensed for acute promyelocytic leukaemia in patients who have relapsed or failed to respond to previous treatment with a retinoid and chemotherapy.

PRECAUTIONS

correct electrolyte abnormalities before treatment; ECG required before and during treatment—consult product literature; avoid concomitant administration with drugs causing QT interval prolongation, hypokalaemia, and hypomagnesaemia; previous treatment with anthracyclines (increased risk of QT interval prolongation); renal impairment (Appendix 3)

CONTRA-INDICATIONS

Pregnancy,breastfeeding

SIDE-EFFECTS

leucocyte activation syndrome (requires immediate treatment—consult product literature); hyperglycaemia, hypokalaemia, leucocytosis, QT interval prolongation, atrial fibrillation, atrial flutter, haemorrhage, dyspnoea, pleuritic pain, musculoskeletal pain, paraesthesia, fatigue

Calcium folinate
EDL-Tertiary restricted 

Calcium folinate is used to counteract the folate-antagonist action of methotrexate and thus speeds recovery from methotrexate- induced mucositis or myelosuppression. Calcium folinate also enhances the effects of 5-fluorouracil when the two are used together for metastatic colorectal cancer.

MESNA
EDL-Tertiary restricted 
INDICATION
Mesna reacts specifically with this metabolite in the urinary tract, preventing toxicity. Mesna is used routinely (preferably by mouth) in patients receiving ifosfamide, and in patients receiving cyclophosphamide by the intravenous route at a high dose (e.g. more than 2 g) or in those who experienced urothelial toxicity when given cyclophosphamide
previously.
CONTRA-INDICATIONS
hypersensitivity to thiol-containing compounds
ADVERSE EFFECTS

Nausea, vomiting, colic, diarrhoea, fatigue, headache, limb and joint pains, depression, irritability, rash, hypotension and tachycardia; rarely
hypersensitivity reactions (more common in patients with auto-immune disorders)
DOSE
Note Doses calculated according to oxazaphosphorine (cyclophosphamide or ifosfamide) treatment—for details consult product literature.
By mouth, dose is given 2 hours before oxazaphosphorine treatment and repeated 2 and 6 hours after treatment.
By intravenous injection, dose is given with oxazaphosphorine treatment and repeated 4 and 8 hours after treatment.

Section 12. CARDIOVASCULAR MEDICINES

CARVEDILOL
EDL-Tertiary restricted 

INDICATIONS

Hypertension; angina; adjunct to diuretics, digoxin, or ACE inhibitors in symptomatic chronic heart failure

PRECAUTIONS

see under Propranolol Hydrochloride; monitor renal function during dose titration in patients with heart failure who also have renal impairment, low blood pressure, ischaemic heart disease, or diffuse vascular disease; severe heart failure

CONTRA-INDICATIONS

see under Propranolol Hydrochloride; severe chronic heart failure; acute or decompensated heart failure requiring intravenous inotropes; hepatic impairment

ADVERSE-EFFECTS

postural hypotension, dizziness, headache, fatigue, gastro-intestinal disturbances, bradycardia; occasionally diminished peripheral circulation, peripheral oedema and painful extremities, dry mouth, dry eyes, eye irritation or disturbed vision, impotence, disturbances of micturition, influenza-like symptoms;rarely angina, AV block, exacerbation of intermittent claudication or Raynaud's phenomenon; allergic skin reactions, exacerbation of psoriasis, nasal stuffiness, wheezing, depressed mood, sleep disturbances, paraesthesia, heart failure, changes in liver enzymes,thrombocytopenia, leucopenia also reported

Dose

Hypertension, initially 12.5 mg once daily, increased after 2 days to usual dose of 25 mg once daily; if necessary may be further increased at intervals of at least 2 weeks to max. 50 mg daily in single or divided doses;

ELDERLY initial dose of 12.5 mg daily may provide satisfactory control Angina, initially 12.5 mg twice daily, increased after 2 days to 25 mg twice daily. Adjunct in heart failure (section 2.5.5) initially 3.125 mg twice daily (with food), dose increased at intervals of at least 2 weeks to 6.25 mg twice daily, then to 12.5 mg twice daily, then to 25 mg twice daily; increase to highest dose tolerated, max. 25 mg twice daily in patients with severe heart failure or bodyweight less than 85 kg and 50 mg twice daily in patients over 85 kg

OLMESARTAN MEDOXOMIL

EDL-Tertiary Restricted 

Candesartan, eprosartan, irbesartan, losartan, olmesartan, telmisartan, and valsartan are angiotensin-II receptor antagonists with many properties similar to those of the ACE inhibitors. However, unlike ACE inhibitors, they do not inhibit the breakdown of bradykinin and other kinins, and thus are unlikely to cause the persistent dry cough which commonly complicates ACE inhibitor therapy. They are therefore a useful alternative
for patients who have to discontinue an ACE inhibitor because of persistent cough.

An angiotensin-II receptor antagonist may be used as an alternative to an ACE inhibitor in the management of heart failure or diabetic nephropathy.

INDICATIONS

Hypertension

PRECAUTIONS

Hepatic impairment (avoid in severe impairment; Appendix 2); renal impairment (avoid if creatinine clearance less than 20 mL/minute; Appendix 3)

CONTRA-INDICATIONS

Biliary obstruction

ADVERSE-EFFECTS

gastro-intestinal disturbances; chest pain, peripheral oedema, hypertriglyceridaemia; fatigue; influenza-like symptoms, cough, pharyngitis, rhinitis; urinary-tract infection; haematuria, hyperuricaemia; arthritis, musculoskeletal pain; less commonly angina, vertigo, rash; very rarely headache, thrombocytopenia, myalgia, pruritus, urticaria

Dose

Initially 10 mg once daily; if necessary increased to 20 mg once daily; max. 40 mg daily

Section 18.DIURETICS

Mannitol
EDl-Secondary

INDICATIONS

Cerebral edema, impending acute renal failure, acute poisonings, raised intraocular pressure (emergency treatment or before surgery).

AVAILABILITY

Infusion 5, 10 and 20%.

DOSE

Test dose (if patient is oliguric or if renal function is inadequate), By intravenous infusion as a 20% solution infused over 3–5 minutes,
Adult and Child- 200 mg/kg; repeat test dose if urine output is less than 30–50 ml/h; if response is inadequate after a second
test dose, re-evaluate the patient.
Raised intracranial or intraocular pressure:
By i.v infusion as a 20% solution infused over 30–60 minutes, **Adult**- 0.25–2g/kg; **Child**- 0.5–1.5g/kg.
Cerebral oedema: By i.v infusion as a 20% solution infused rapidly,
Adult and Child- 1g/kg.

CONTRAINDICATIONS

Acidosis, congestive heart failure, pulmonary oedema (particularly in diminished cardiac reserve), dehydration, inadequate urine flow, acute tubular necrosis, anuria, acute left ventricular failure, intracranial bleeding.

PRECAUTIONS

Patients with cardiovascular disease; hypervolemia; urinary tract obstruction; should not be given with whole blood; pregnancy (Appendix 7c).

ADVERSE EFFECTS

Headache, nausea, vomiting, dehydration, edema, hypernatraemia, inflammation, skin necrosis, urticaria, chills, convulsions, fluid and electrolyte imbalance, acidosis,
circulatory overload, visual disturbance.

CHLORTALIDONE
EDL-Tertiary restricted 

Chlortalidone (chlorthalidone), a thiazide-related compound, has a longer duration of action than the thiazides and may be given on alternate days to control oedema. It is also useful if acute retention is liable to be precipitated

by a more rapid diuresis or if patients dislike the altered pattern of micturition caused by other diuretics.

INDICATIONS

Ascites due to cirrhosis in stable patients (under close supervision), oedema due to nephritic syndrome, hypertension (see also notes above), mild
to moderate chronic heart failure; diabetes insipidus.

PRECAUTIONS

Thiazides and related diuretics can exacerbate diabetes, gout, and systemic
lupus erythematosus. Electrolytes should be monitored,particularly with high doses, long-term use, or in renal impairment. Thiazides and related diuretics should also be used with caution in nephrotic syndrome, hyperaldosteronism,
malnourishment, hepatic impairment, renal impairment , pregnancy, and breast-feeding.

CONTRA-INDICATIONS

Thiazides and related diuretics should be avoided in refractory hypokalaemia, hyponatraemia and hypercalcaemia, symptomatic hyperuricaemia, and Addison's disease.

ADVERSE EFFECT

Side-effects of thiazides and related diuretics include mild gastro-intestinal disturbances, postural hypotension, altered plasma lipid concentrations, metabolic and electrolyte disturbances including hypokalaemia
(see also notes above), hyponatraemia, hypomagnesaemia, hypercalcaemia, hyperglycaemia, hypochloraemic alkalosis, hyperuricaemia, and gout. Less
common side-effects include blood disorders such as agranulocytosis, leucopenia, and thrombocytopenia, and impotence. Pancreatitis, intrahepatic cholestasis, cardiac arrhythmias, headache, dizziness, paraesthesia, visual disturbances, and hypersensitivity reactions (including pneumonitis, pulmonary oedema, photosensitivity, and severe skin reactions) have also been reported.

Dose

Oedema, up to 50 mg daily

Hypertension, 25 mg daily in the morning, increased to 50 mg daily if necessary (but see notes above)

Heart failure, 25–50 mg daily in the morning, increased if necessary to 100–200 mg daily (reduce to lowest effective dose for maintenance)

TRIAMTERENE
EDL-Tertiary restricted 

INDICATIONS
Oedema, potassium conservation with thiazide and loop diuretics
PRECAUTIONS
see under Amiloride Hydrochloride; may cause blue fluorescence of urine
CONTRA-INDICATIONS
see under Amiloride Hydrochloride
ADVERSE EFFECT
Include gastro-intestinal disturbances, dry mouth, rashes; slight decrease in blood pressure, hyperkalaemia, hyponatraemia; photosensitivity and blood disorders also reported; triamterene found in
Kidney stones
DOSE
Initially 150–250 mg daily, reducing to alternate days after 1 week; taken in divided doses after breakfast and lunch; lower initial dose when given with other diuretics
Counselling Urine may look slightly blue in some lights
Capsules, maroon, triamterene 50 mg

Section 19. EAR, NOSE AND THROAT PREPARATIONS

Mometasone
EDL-Tertiary restricted 

INDICATIONS
Dermatoses, prophylaxis and treatment of allergic rhinitis, nasal polyps, prophylaxis of asthma.
AVAILABILITY
CREAMS 0.1% w/w; LOTIONS 0.1 % w/v;
OINTMENTS 0.1% w/v; NASAL SPRAY 0.05% w/v.
DOSE
Dermatoses: Adult 0.1% cream or ointment or lotion.
Allergic rhinitis: 100 µg in each nostril once daily. Usual maintenance dose 50 µg in each nostril daily.
Asthma: Adult- 200-400 µg daily in 1-2 divided doses.
Child- 100 µg once daily.
CONTRAINDICATIONS
Hypersensitivity.
PRECAUTIONS
Hepatic and renal disease; myasthenia gravis, cardiovascular disease; ocular diseases; osteoporosis, glucocorticosteroid insufficiency; discontinue if irritation or sensitization occurs; interactions (Appendix 6c); pregnancy (Appendix 7c).

ADVERSE EFFECTS
Adrenal suppression; immunosuppression; anaphylaxis; musculoskeletal pain; depression; fatigue; sinusitis; oropharyngeal infections; upper respiratory tract infection; gastrointestinal disturbances; conjuctivitis; otitis media; local irritation and sensitization; bacterial skin infection; skin depigmentation; cataract; growth suppression.

Betahistine dihydrochloride
EDL-Tertiary restricted 

INDICATIONS
vertigo, tinnitus and hearing loss associated with Me´nie`re's disease
PRECAUTIONS
asthma, history of peptic ulcer; pregnancy and breast-feeding; interactions: Appendix 1 (betahistine)
CONTRA-INDICATIONS
phaeochromocytoma
ADVERSE-EFFECTS

gastro-intestinal disturbances; headache, rashes and pruritus reported

Dose

Initially 16 mg 3 times daily, preferably with food; maintenance 24–48 mg daily; CHILD not recommended

Tablets, betahistine dihydrochloride 8 mg, 16 mg,

Ichthammol

EDL-Secondary

INDICATIONS

chronic lichenified eczema

AVAILABILITY

Ointment, cream

Ointment, ichthammol 10%, yellow soft paraffin 45%, wool fat 45%

Cream, ichthammol 5%, cetostearyl alcohol 3%, wool fat 10%, in zinc cream

DOSE

Apply 1–3 times daily

SIDE-EFFECTS

skin irritation

Section 20. GASTROINTESTINAL MEDICINES

URSODEOXYCHOLIC ACID
EDL-Tertiary restricted 

INDICATIONS
see under Dose and under preparations
PRECAUTIONS
see notes above; interactions: Appendix 1 (ursodeoxycholic acid)
CONTRA-INDICATIONS
radio-opaque stones, pregnancy (Appendix 4), non-functioning gall bladder, inflammatory diseases and other conditions of the small intestine, colon and liver which interfere with enterohepatic
circulation of bile salts.
SIDE-EFFECTS
nausea, vomiting, diarrhoea; gallstone calcification; pruritus
Dose
Dissolution of gallstones, 8–12 mg/kg daily as a single dose at bedtime or in two divided doses, for up to 2 years; treatment is continued for 3–4 months after stones dissolve

Section 21. HORMONES, OTHER ENDOCRINE MEDICINES AND CONTRACEPTIVES

Pioglitazone
EDL-Tertiary restricted 

INDICATIONS
Type 2 diabetes mellitus.
AVAILABILITY
TABLETS 15 and 30 mg.
Dose
Oral
Type 2 diabetes mellitus: Adult- 15-30 mgonce daily.
Max. dose- 45 mg per day.
CONTRAINDICATIONS
Hypersensitivity, type 1 diabetes, diabetic ketoacidosis, symptomatic or history of heart failure, children, lactation.
PRECAUTIONS
Oedema, congestive heart failure, hepatic dysfunction, anaemia, concomitant oral contraceptives and hormone replacement
therapy, pregnancy (Appendix 7c), interactions (Appendix 6c).
ADVERSE EFFECTS
Oedema, headache, upper respiratory tract infection, GI disturbances, nausea, shortness of breath, weight gain, blurred vision, dizziness, arthralgia, impotence.

STORAGE
Store protected from heat, light and moisture at a temperature not exceeding 30^0 C.

ACARBOSE
EDL-Tertiary restricted 
Acarbose, an inhibitor of intestinal alpha glucosidases, delays the digestion and absorption of starch and sucrose; it has a small but significant effect in lowering
blood glucose. Use of acarbose is usually reserved for when other oral hypoglycaemics are not tolerated or are contra-indicated. Postprandial hyperglycaemia in type 1 diabetes can be reduced by acarbose, but it has been little used for this purpose. Flatulence deters some from using acarbose although this side-effect tends to decrease with time.

INDICATIONS

Diabetes mellitus inadequately controlled by diet or by diet with oral antidiabetic drugs

PRECAUTIONS

monitor liver function; may enhance hypoglycaemic effects of insulin and sulphonylureas (hypoglycaemic episodes may be treated with oral glucose but not with sucrose);

CONTRA-INDICATIONS

inflammatory bowel disease, predisposition to partial intestinal obstruction; hernia, previous abdominal surgery; hepatic impairment; renal impairment; pregnancy; breast-feeding.

SIDE-EFFECTS

flatulence, soft stools, diarrhoea (may need to reduce dose or withdraw), abdominal distention and pain; rarely, nausea, abnormal liver function tests and skin reactions; very rarely ileus, oedema, jaundice, and hepatitis

Note Antacids unlikely to be beneficial for treating sideeffects

Dose

Initially 50 mg daily increased to 50 mg 3 times daily, then increased if necessary after 6–8 weeks to 100 mg 3 times daily; max. 200 mg 3 times daily; CHILD and ADOLESCENT under 18 years not recommended

Counselling Tablets should be chewed with first mouthful of food or swallowed whole with a little liquid immediately before food. To counteract possible hypoglycaemia, patients receiving insulin or a sulphonylurea as well as acarbose need to carry glucose (not sucrose—acarbose interferes with sucrose absorption)

VASOPRESSIN

EDL- Tertiary

INDICATIONS

Pituitary diabetes insipidus; bleeding from oesophageal varices

PRECAUTIONS

Heart failure, hypertension, asthma, epilepsy, migraine or other conditions which might be aggra- vated by water retention; renal impairment (see also Contra-indications); pregnancy (Appendix 4); avoid fluid overload

CONTRA-INDICATIONS

Vascular disease (especially disease of coronary arteries) unless extreme caution, chronic nephritis (until reasonable blood nitrogen concentrations attained)

ADVERSE-EFFECTS

Fluid retention, pallor, tremor, sweating, vertigo, headache, nausea, vomiting, belching, abdominal cramps, desire to defaecate, hypersensitivity

reactions (including anaphylaxis), constriction of coronary arteries (may cause anginal attacks and myocardial ischaemia), peripheral ischaemia and rarely gangrene

Dose

By subcutaneous or intramuscular injection, diabetes insipidus, 5–20 units every four hours

By intravenous infusion, initial control of variceal bleeding, 20 units over 15 minutes

Synthetic vasopressin

Injection, argipressin (synthetic vasopressin) 20 units/mL. Net price 1-mL amp = £17.14 (hosp. only)

Section 23. MUSCLE RELAXANTS (PERIPHERALLY ACTING) AND CHOLINESTERASE INHIBITORS

TAMSULOSIN HYDROCHLORIDE

EDL-Tertiary restricted 

The selective alpha-blockers, alfuzosin, doxazosin, indoramin, prazosin, tamsulosin and terazosin relax smooth muscle in benign prostatic hyperplasia producing an increase in urinary flow-rate and an improvement in obstructive symptoms.

INDICATIONS

Since selective alpha-blockers reduce blood pressure, patients receiving antihypertensive treatment may require reduced dosage and specialist supervision. Caution may be required in the elderly and in patients with hepatic impairment (Appendix 2) and renal impairment (Appendix 3). For interactions see Appendix 1 (alpha-blockers).

CONTRA-INDICATIONS

Alpha-blockers should be avoided in patients with a history of postural hypotension and micturition syncope.

SIDE-EFFECTS

Side-effects of selective alpha-blockers include drowsiness, hypotension (notably postural hypotension), syncope, asthenia, depression, headache, dry mouth, gastro-intestinal disturbances (including nausea, vomiting, diarrhoea, constipation), oedema, blurred vision, rhinitis, erectile disorders (including priapism), tachycardia, and palpitations. Hypersensitivity reactions including rash, pruritus and angioedema have also been reported.

Dose

400 micrograms daily as a single dose

Section 27. PSYCHOTHERAPEUTIC MEDICINES

NORTRIPTYLINE
EDL- Tertiary
INDICATIONS
depressive illness; nocturnal enuresis in children; neuropathic pain.
PRECAUTIONS
See under Amitriptyline Hydrochloride; manufacturer advises plasma-nortriptyline concentration monitoring if dose above 100 mg daily, but evidence of practical value uncertain
CONTRA-INDICATIONS
Amitriptyline Hydrochloride
ADVERSE-EFFECT
See under Amitriptyline Hydrochloride, but less sedating
DOSE
Depression, low dose initially increased as necessary to 75–100 mg daily in divided doses or as a single dose (max. 150 mg daily); ADOLESCENT and ELDERLY 30– 50 mg daily in divided doses; CHILD not recommended for depression Nocturnal enuresis, CHILD 7 years 10 mg, 8–11 years 10–20 mg, over 11 years 25–35 mg, at night; max period of treatment (including gradual withdrawal) 3 months—full physical examination and ECG before further course
Neuropathic pain [unlicensed], initially 10–25 mg daily at night, increased if necessary to 75 mg daily; higher doses under specialist supervision
Tablets, nortriptyline (as hydrochloride) 10 mg, 25 mg (orange, scored

Section 29. SOLUTIONS CORRECTING WATER, ELECTROLYTE AND ACID-BASE DISTURBANCES

Sodium citrate
EDL- Secondary
AVAILABILITY- Syrup 100ml
INDICATIONS- relief of discomfort in mild urinary-tract infections
PRECAUTIONS -renal impairment; cardiac disease; hypertension;pregnancy; patients on a sodium-restricted diet; elderly
SIDE-EFFECTS- mild diuresis