(p.1165). It is also used to reduce mortality in patients with left ventricular dysfunction after myocardial infarction.

In **hypertension** carvedilol is given in an initial oral dose of 12.5 mg once daily, increased after two days to 25 mg once daily. Alternatively, an initial dose of 6.25 mg is given twice daily, increased after one to two weeks to 12.5 mg twice daily. The dose may be increased further, if necessary, at intervals of at least two weeks, to 50 mg once daily or in divided doses. A dose of 12.5 mg once daily may be adequate for elderly patients.

In **angina pectoris** an initial oral dose of 12.5 mg is given twice daily, increased after two days to 25 mg twice daily.

In **heart failure**, the initial oral dose is 3.125 mg twice daily. It should be taken with food to reduce the risk of hypotension. If tolerated, the dose should be doubled after two weeks to 6.25 mg twice daily and then increased gradually, at intervals of not less than two weeks, to the maximum dose tolerated; this should not exceed 25 mg twice daily in patients with severe heart failure or in those weighing less than 85 kg, or 50 mg twice daily in patients with mild to moderate heart failure weighing more than 85 kg. For doses in children, see below.

In patients with **left ventricular dysfunction after myocardial infarction**, the initial dose is 6.25 mg twice daily, increased after 3 to 10 days, if tolerated, to 12.5 mg twice daily and then to a target dose of 25 mg twice daily. A lower initial dose may be used in symptomatic patients.

A controlled-release preparation containing carvedilol phosphate hemihydrate is available in some countries.

◊ References.

1. Ruffolo RR, *et al.* The pharmacology of carvedilol. *Eur J Clin Pharmacol* 1990; **38:** S82–S88.
2. McTavish D, *et al.* Carvedilol: a review of its pharmacodynamic and pharmacokinetic properties, and therapeutic efficacy. *Drugs* 1993: **45:** 232–58.
3. Morgan T. Clinical pharmacokinetics and pharmacodynamics of carvedilol. *Clin Pharmacokinet* 1994; **26:** 335–46.
4. Louis WJ, *et al.* A risk-benefit assessment of carvedilol in the treatment of cardiovascular disorders. *Drug Safety* 1994; **11:** 86–93.
5. Dunn CJ, *et al.* Carvedilol: a reappraisal of its pharmacological properties and therapeutic use in cardiovascular disorders. *Drugs* 1997; **54:** 161–85.
6. Frishman WH. Carvedilol. *N Engl J Med* 1998; **339:** 1759–65.
7. Keating GM, Jarvis B. Carvedilol: a review of its use in chronic heart failure. *Drugs* 2003; **63:** 1697–1741.
8. Naccarelli GV, Lukas MA. Carvedilol's antiarrhythmic properties: therapeutic implications in patients with left ventricular dysfunction. *Clin Cardiol* 2005; **28:** 165–73.

Administration in children. Carvedilol has been used in children with heart failure, although experience is limited.[1] Beneficial effects have been reported, including improvement in symptoms and ejection fraction, and delaying the need for heart transplantation, and carvedilol appears to be well tolerated. Doses used have varied, with initial oral doses ranging from 10 to 180 micrograms/kg daily and average oral maintenance doses ranging from 200 to 700 micrograms/kg (maximum 50 mg) daily, usually given in two divided doses. However, a randomised study[2] in 161 children and adolescents with heart failure found that carvedilol was not significantly better than placebo: clinical improvement occurred in 56% of those taking carvedilol and 56% of those taking placebo.

In the UK, the *BNFC* recommends that children aged 2 to 18 years with heart failure may be given an initial oral dose of 50 micrograms/kg (maximum 3.125 mg) twice daily, increased as tolerated, by doubling the dose at intervals of at least 2 weeks, to a maintenance dose of 350 micrograms/kg (maximum 25 mg) twice daily.

1. Greenway SC, Benson LN. The use of carvedilol in pediatric heart failure. *Cardiovasc Hematol Disord Drug Targets* 2006; **6:** 35–42.
2. Shaddy RE, *et al.* Carvedilol for children and adolescents with heart failure: a randomized controlled trial. *JAMA* 2007; **298:** 1171–9.

Administration in the elderly. Licensed product information for carvedilol recommends an initial dose of 12.5 mg daily for all adults with hypertension. A study in 16 elderly hypertensive patients (mean age 70 years) given single doses of 12.5 mg and 25 mg found a high incidence of orthostatic hypotension[1] and the authors suggested that a starting dose lower than 12.5 mg may be necessary in elderly patients.

A retrospective study[2] found that standard initial doses for heart failure (see Uses and Administration, above) were well tolerated in elderly patients and that the mean achieved dose was similar in those aged under 70 years and those aged 70 years and older, after adjustment for weight. Adverse effects were more common in the older group, but could generally be managed without stopping carvedilol.

1. Krum H, *et al.* Postural hypotension in elderly patients given carvedilol. *BMJ* 1994; **309:** 775–6.
2. Lawless CE, *et al.* Titration of carvedilol in elderly heart failure patients. *Am J Geriatr Cardiol* 2005; **14:** 230–5.

Preparations

Proprietary Preparations (details are given in Part 3)
Arg.: Antibloc; Bidecar; Carvedil; Carvel†; Corafen; Coritensil; Corubin; Dilatrend; Duobloc; Filten; Hipoten; Isobloc; Kollosteril; Rodipal; Rudoxil; Veraten; Vicardol; ***Austral.:*** Dilatrend; Kredex; ***Austria:*** Dilatrend; Hybridil; ***Belg.:*** Dimitone; Kredex; ***Braz.:*** Cardilol; Carvedilat; Coreg; Dilatrend†; Divelol; Ictus; Karvil; ***Canad.:*** Coreg; ***Chile:*** Betaplex; Blocar; Dilatrend; Dualten; Lodipres; Novocar†; Off-Ten; ***Cz.:*** Apo-Carve; Atram; Carvedigamma; Carvesan; Carvetrend; Coryol; Dilatrend; Talliton; ***Denm.:*** Carvetone; Dimitone; ***Fin.:*** Cardiol; ***Fr.:*** Kredex; ***Ger.:*** CarLich; Carve; Carve-Q; Carvecard; Carvedigamma; Dilatrend; Dimetil; Querto; ***Gr.:*** Carvedilen; Carvepen; Dilatrend; ***Hong Kong:*** Dilatrend; ***Hung.:*** Carvedigamma; Carvol; Coryol; Dilatrend; Talliton; ***India:*** Carloc; Carvil; Cevas; ***Indon.:*** Carbloxal; Dilbloc; V-Bloc; ***Irl.:*** Biocard; Eucardic; ***Israel:*** Carvedexxon; Dimitone; ***Ital.:*** Carvipress; Colver; Dilatrend; Dilocar; ***Malaysia:*** Caslot; Cavel; Dilatrend; ***Mex.:*** Dilatrend; ***Neth.:*** Eucardic; ***Norw.:*** Kredex; ***NZ:*** Dilatrend; ***Philipp.:*** Dilatrend; ***Pol.:*** Atram; Carvedigamma; Carvetrend; Coryol; Dilatrend; Vivacor; ***Port.:*** Dilbloc; ***Rus.:*** Acridilole (Акридилол); Cardivas (Кардивас); Carvetrend (Карветренд); Carvidil (Карвидил); Coryol (Корионл); Talliton (Таллитон); ***S.Afr.:*** Carloc; Carvetrend; Dilatrend; ***Singapore:*** Dilatrend; ***Spain:*** Coropres; ***Swed.:*** Kredex; ***Switz.:*** Dilatrend; ***Thai.:*** Dilatrend; ***Turk.:*** Dilatrend; ***UK:*** Eucardic; ***USA:*** Coreg; ***Venez.:*** Carbatil; Carvedil; Coventrol; Dilatrend.

Multi-ingredient: ***Arg.:*** Carvedil D; ***Austria:*** Co-Dilatrend; Dilaplus.

Celiprolol Hydrochloride

(BANM, USAN, rINNM) ⊗

Céliprolol, chlorhydrate de; Celiprolol-hydrochlorid; Celiprolol-hydroklorid; Celiprololi hydrochloridum; Celiprololio hidrochloridas; Celiprololu chlorowodorek; Hidrocloruro de celiprolol; Seliprololihydrokloridi. 3-{3-Acetyl-4-[3-(*tert*-butylamino)-2-hydroxypropoxy]phenyl}-1,1-diethylurea hydrochloride.

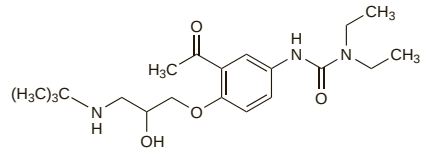
Целипролола Гидрохлорид

$C_{20}H_{33}N_3O_4$,HCl = 416.0.

CAS — 56980-93-9 (celiprolol); 57470-78-7 (celiprolol hydrochloride).

ATC — C07AB08.

ATC Vet — QC07AB08.



(celiprolol)

Pharmacopoeias. In *Eur.* (see p.vii).

Ph. Eur. 6.2 (Celiprolol Hydrochloride). A white or very slightly yellow, crystalline powder. It exhibits polymorphism. Freely soluble in water and in methyl alcohol; soluble in alcohol; very slightly soluble in dichloromethane. Protect from light.

Adverse Effects, Treatment, and Precautions

As for Beta Blockers, p.1226.

Tremor and palpitations associated with intrinsic sympathomimetic activity at $beta_2$ receptors have been reported.

Interactions

The interactions associated with beta blockers are discussed on p.1228.

Pharmacokinetics

Celiprolol is absorbed from the gastrointestinal tract in a non-linear fashion; the percentage of the dose absorbed increases with increasing dose. The plasma elimination half-life is about 5 to 6 hours. Celiprolol crosses the placenta. It has low lipid solubility and is about 25% bound to plasma proteins. Metabolism is minimal and celiprolol is mainly excreted unchanged in the urine and faeces.

Uses and Administration

Celiprolol is a cardioselective beta blocker (p.1225). It is reported to possess intrinsic sympathomimetic activity and direct vasodilator activity. Celiprolol is used as the hydrochloride in the management of hypertension (p.1171) and angina pectoris (p.1157). The usual oral dose of celiprolol hydrochloride is 200 to 400 mg once daily before food. Reduced doses may be required in patients with renal impairment (see below).

◊ References.

1. Milne RJ, Buckley MM-T. Celiprolol: an updated review of its pharmacodynamic and pharmacokinetic properties, and therapeutic efficacy in cardiovascular disease. *Drugs* 1991; **41:** 941–69.
2. Anonymous. Celiprolol: theory and practice. *Lancet* 1991; **338:** 1426–7.
3. Anonymous. Celiprolol—a better beta blocker? *Drug Ther Bull* 1992; **30:** 35–6.
4. Kendall MJ, Rajman I. A risk-benefit assessment of celiprolol in the treatment of cardiovascular disease. *Drug Safety* 1994; **10:** 220–32.
5. Riddell J. Drugs in focus 18: celiprolol. *Prescribers' J* 1996; **36:** 165–8.

Administration in renal impairment. Celiprolol should not be given to patients with a creatinine clearance (CC) of less than 15 mL/minute. Patients with a CC between 15 and 40 mL/minute may be given 100 to 200 mg daily.

Preparations

BP 2008: Celiprolol Tablets.

Proprietary Preparations (details are given in Part 3)
Austria: Selectol; ***Belg.:*** Selectol; ***Chile:*** Selectol; ***Cz.:*** Celectol†; Tenoloc; ***Fin.:*** Selectol; ***Fr.:*** Celectol; ***Ger.:*** Celip; Celipro; Celiprogamma; Selectol; ***Gr.:*** Aplonit; Selectol; Versatil; ***Hong Kong:*** Selectol; ***Irl.:*** Selectol; ***Ital.:*** Cordiax; ***Jpn:*** Selectol; ***Neth.:*** Dilanorm; ***NZ:*** Celol; ***Pol.:*** Celipres; ***Spain:*** Cardem; ***Switz.:*** Selectol; ***UK:*** Celectol.

Multi-ingredient: ***Austria:*** Selecturon.

Certoparin Sodium *(BAN, rINN)*

Certoparin; Certoparina sódica; Certoparine Sodique; Certoparinum Natricum.

Цертопарин Натрий

Description. Certoparin sodium is prepared by amyl nitrite degradation of heparin obtained from the intestinal mucosa of pigs. The majority of the components have a 2-*O*-sulfo-α-L-idopyranosuronic acid structure at the non-reducing end and a 6-*O*-sulfo-2,5-anhydro-D-mannose structure at the reducing end of their chain. The molecular weight of 70% of the components is less than 10 000 and the average molecular weight is about 6000. The degree of sulfation is about 2 to 2.5 per disaccharide unit.

Units

As for Low-molecular-weight Heparins, p.1329.

Adverse Effects, Treatment, and Precautions

As for Low-molecular-weight Heparins, p.1329.

Severe bleeding with certoparin may be reduced by the slow intravenous injection of protamine salts; 1 mg of protamine hydrochloride is stated to inhibit the effects of 80 to 120 units of certoparin sodium.

Interactions

As for Low-molecular-weight Heparins, p.1329.

Pharmacokinetics

Certoparin sodium is rapidly and completely absorbed after subcutaneous injection. Peak plasma activity is reached within 2 to 4 hours. The half-life of anti-factor Xa activity is about 4 hours.

Uses and Administration

Certoparin sodium is a low-molecular-weight heparin (p.1329) with anticoagulant activity used for the prevention of postoperative venous thromboembolism (p.1189). It is given by subcutaneous injection in a dose of 3000 units 1 to 2 hours before the procedure, followed by 3000 units daily for 7 to 10 days or until the patient is fully ambulant.

◊ References.

1. Kolb G, *et al.* Reduction of venous thromboembolism following prolonged prophylaxis with the low molecular weight heparin certoparin after endoprothetic joint replacement or osteosynthesis of the lower limb in elderly patients. *Thromb Haemost* 2003; **90:** 1100–5.
2. Riess H, *et al.* Fixed-dose, body weight-independent subcutaneous low molecular weight heparin certoparin compared with adjusted-dose intravenous unfractionated heparin in patients with proximal deep venous thrombosis. *Thromb Haemost* 2003; **90:** 252–9.
3. Diener HC, *et al.* Prophylaxis of thrombotic and embolic events in acute ischemic stroke with the low-molecular-weight heparin certoparin: results of the PROTECT Trial. *Stroke* 2006; **37:** 139–44.
4. Tebbe U, *et al.* AFFECT: a prospective, open-label, multicenter trial to evaluate the feasibility and safety of a short-term treatment with subcutaneous certoparin in patients with persistent non-valvular atrial fibrillation. *Clin Res Cardiol* 2008; **97:** 389–96.

Preparations

Proprietary Preparations (details are given in Part 3)
Austria: Sandoparin; Troparin; ***Cz.:*** Troparin†; ***Ger.:*** Mono-Embolex; ***Hung.:*** Sandoparin†; ***Switz.:*** Sandoparine; ***UK:*** Alphaparin†.

Multi-ingredient: ***Austria:*** Troparin compositum; ***Ger.:*** Embolex NM†.

Cetiedil Citrate *(USAN, rINNM)*

Cétiédil, Citrate de; Cetiedili Citras; Citrato de cetiedil. 2-(Perhydroazepin-1-yl)ethyl α-cyclohexyl-α-(3-thienyl)acetate dihydrogen citrate monohydrate.

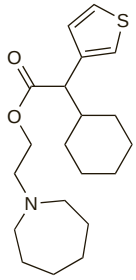
Цетиедила Цитрат

$C_{20}H_{31}NO_2S,C_6H_8O_7,H_2O$ = 559.7.

CAS — 14176-10-4 (cetiedil); 16286-69-4 (anhydrous cetiedil citrate).

ATC — C04AX26.

ATC Vet — QC04AX26.



(cetiedil)

Profile

Cetiedil citrate is a vasodilator with antimuscarinic activity that has been used in the management of peripheral vascular disease.

Chlorothiazide *(BAN, rINN)* ⊗

Chlorothiazid; Chlorothiazidum; Chlorotiazidas; Chlorotiazyd; Clorotiazida; Klooritiatsidi; Klorotiazid; Klortiazid. 6-Chloro-2*H*-1,2,4-benzothiadiazine-7-sulphonamide 1,1-dioxide.

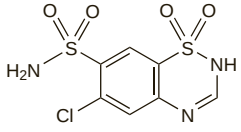
Хлоротиазид

$C_7H_6ClN_3O_4S_2$ = 295.7.

CAS — 58-94-6.

ATC — C03AA04.

ATC Vet — QC03AA04.



Pharmacopoeias. In *Eur.* (see p.vii) and *US.*

Ph. Eur. 6.2 (Chlorothiazide). A white or almost white crystalline powder. Very slightly soluble in water; slightly soluble in alcohol; sparingly soluble in acetone. It dissolves in dilute solutions of alkali hydroxides.

USP 31 (Chlorothiazide). A white or practically white, odourless, crystalline powder. Very slightly soluble in water; practically insoluble in chloroform, in ether, and in benzene; freely soluble in dimethylformamide and dimethyl sulfoxide; slightly soluble in methyl alcohol and in pyridine. Store at a temperature of 25°, excursions permitted between 15° and 30°.

Stability. Alkaline solutions undergo decomposition due to hydrolysis upon standing or heating.

Chlorothiazide Sodium *(BANM, USAN, rINNM)* ⊗

Chlorothiazide Sodique; Clorotiazida sódica; Natrii Chlorothiazidum; Sodium Chlorothiazide.

Натрий Хлоротиазид

$C_7H_5ClN_3NaO_4S_2$ = 317.7.

CAS — 7085-44-1.

ATC — C03AA04.

ATC Vet — QC03AA04.

Pharmacopoeias. *US* includes Chlorothiazide Sodium for Injection.

Incompatibility. The alkaline nature of chlorothiazide in injectable form suggests that incompatibilities with acidic drugs could be expected; US licensed product information states that the injection may be diluted with glucose or sodium chloride solutions.

Adverse Effects, Treatment, and Precautions

As for Hydrochlorothiazide, p.1307. Chlorothiazide sodium injection is alkaline: when giving chlorothiazide by intravenous infusion, care should be taken to ensure that extravasation does not occur.

Breast feeding. Chlorothiazide is distributed into breast milk in small amounts. A single 500-mg oral dose of chlorothiazide was given[1] to 11 lactating women and blood and milk samples taken after 1, 2, and 3 hours; all the samples had concentrations below 1 microgram/mL and it was calculated that an infant would receive no more than 1 mg of drug each day. The American Academy of Pediatrics states that no adverse effects have been seen in infants and therefore considers[2] that chlorothiazide is usually compatible with breast feeding.

1. Werthmann MW, Krees SV. Excretion of chlorothiazide in human breast milk. *J Pediatr* 1972; **81:** 781–3.
2. American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001; **108:** 776–89. Correction. *ibid.*; 1029. Also available at: http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/3/776 (accessed 06/07/04)

Interactions

As for Hydrochlorothiazide, p.1309.

Pharmacokinetics

Chlorothiazide is incompletely and variably absorbed from the gastrointestinal tract. It has been estimated to have a plasma half-life of 45 to 120 minutes although the clinical effects may last for up to about 12 hours. It is excreted unchanged in the urine. Chlorothiazide crosses the placental barrier and small amounts are reported to be distributed into breast milk.

Uses and Administration

Chlorothiazide is a thiazide diuretic with actions and uses similar to those of hydrochlorothiazide (p.1310). It is used for oedema, including that associated with heart failure (p.1165), and for hypertension (p.1171).

After oral doses of chlorothiazide diuresis usually occurs in about 2 hours, reaches a maximum at about 4 hours, and is maintained for 6 to 12 hours.

In the treatment of **oedema** the usual dose of chlorothiazide is 0.25 to 1 g orally once or twice daily; therapy on alternate days or on 3 to 5 days weekly may be adequate. The dose should not normally exceed 2 g daily.

In the treatment of **hypertension** the usual initial dose is 250 to 500 mg daily orally, given as a single or divided dose. A dose of 125 mg may be adequate in some patients. Patients may rarely require up to 1 g daily.

For the use of chlorothiazide in children, see below.

Chlorothiazide has also been given intravenously as the sodium salt, in doses similar to those given orally. Chlorothiazide sodium 537 mg is equivalent to about 500 mg of chlorothiazide. It is not suitable for subcutaneous or intramuscular injection and extravasation should be avoided. The diuretic effect lasts for up to 2 hours after intravenous injection.

Administration in children. Chlorothiazide may be used in children for the management of *heart failure* or *hypertension*. Usual oral doses are as follows:

- neonates and infants aged 1 to 6 months: 10 to 20 mg/kg twice daily
- age 6 months to 12 years: 10 mg/kg twice daily, to a maximum of 1 g daily
- age 12 to 18 years: 0.25 to 1 g once daily or 125 to 500 mg twice daily

For *diabetes insipidus* in children, the *BNFC* suggests an oral dose of 10 to 20 mg/kg twice daily, to a maximum of 1 g daily.

Chlorothiazide also has a hyperglycaemic effect and has been used in children with *chronic hypoglycaemia* (see under Uses of Glucagon, p.1447). It is usually given with diazoxide and has the added benefit of reducing diazoxide-associated sodium and water retention. The *BNFC* suggests an oral dose of 3 to 5 mg/kg twice daily.

Preparations

USP 31: Chlorothiazide Oral Suspension; Chlorothiazide Sodium for Injection; Chlorothiazide Tablets; Methyldopa and Chlorothiazide Tablets; Reserpine and Chlorothiazide Tablets.

Proprietary Preparations (details are given in Part 3)

Singapore: Chlorzide†; ***USA:*** Diurigen; Diuril.

Multi-ingredient: ***Canad.:*** Supres†; ***Gr.:*** Neourizine; ***USA:*** Aldoclor; Diupres.

Chlortalidone *(BAN, rINN)* ⊗

Chlorotalidon; Chlortalidon; Chlortalidonas; Chlortalidonum; Chlorthalidone *(USAN)*; Clorotalidona; Clortalidona; G-33182; Klooritaldoni; Klórtalidon; Klortalidon; NSC-69200. 2-Chloro-5-(1-hydroxy-3-oxoisoindolin-1-yl)benzenesulphonamide

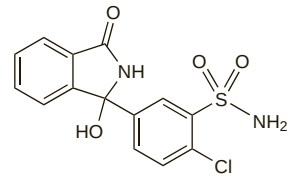
Хлорталидон

$C_{14}H_{11}ClN_2O_4S$ = 338.8.

CAS — 77-36-1.

ATC — C03BA04.

ATC Vet — QC03BA04.



NOTE. Compounded preparations of chlortalidone may be represented by the following names:

- Co-tenidone (*BAN*)—chlortalidone 1 part and atenolol 4 parts (w/w).

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, and *US.*

Ph. Eur. 6.2 (Chlortalidone). A white or yellowish-white powder. Very slightly soluble in water; soluble in acetone and in methyl alcohol; practically insoluble in dichloromethane. It dissolves in dilute solutions of alkali hydroxides. It exhibits polymorphism.

USP 31 (Chlorthalidone). A white or yellowish-white crystalline powder. Practically insoluble in water, in chloroform, and in ether; slightly soluble in alcohol; soluble in methyl alcohol.

Adverse Effects, Treatment, and Precautions

As for Hydrochlorothiazide, p.1307.

Breast feeding. Chlortalidone is distributed into breast milk, but a study[1] in 9 women given a dose of 50 mg daily found that the concentration in milk was only about 5% of that in the blood. However, caution was advised since chlortalidone elimination may be slower in neonates. The American Academy of Pediatrics considers[2] that chlortalidone is usually compatible with breast feeding.

1. Mulley BA, *et al.* Placental transfer of chlorthalidone and its elimination in maternal milk. *Eur J Clin Pharmacol* 1978; **13:** 129–31.
2. American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001; **108:** 776–89. Correction. *ibid*; 1029. Also available at: http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/3/776 (accessed 06/07/04)

Interactions

As for Hydrochlorothiazide, p.1309.

Anticoagulants. For references to the interaction between *warfarin* and chlortalidone, see p.1430.

Pharmacokinetics

Chlortalidone is erratically absorbed from the gastrointestinal tract and bioavailability varies according to the preparation used. It has a prolonged elimination half-life from plasma and blood of 40 to 60 hours and is highly bound to red blood cells; the receptor to which it is bound has been identified as carbonic anhydrase. Chlortalidone is much less strongly bound to plasma proteins. Chlortalidone is mainly excreted unchanged in the urine. It crosses the placental barrier and is distributed into breast milk.

◊ References.

1. Riess W, *et al.* Pharmacokinetic studies with chlorthalidone (Hygroton) in man. *Eur J Clin Pharmacol* 1977; **12:** 375–82.
2. Fleuren HLJ, *et al.* Absolute bioavailability of chlorthalidone in man: a cross-over study after intravenous and oral administration. *Eur J Clin Pharmacol* 1979; **15:** 35–50.
3. Fleuren HLJ, *et al.* Dose-dependent urinary excretion of chlorthalidone. *Clin Pharmacol Ther* 1979; **25:** 806–12.
4. Mulley BA, *et al.* Pharmacokinetics of chlorthalidone: dependence of biological half life on blood carbonic anhydrase levels. *Eur J Clin Pharmacol* 1980; **17:** 203–7.

Uses and Administration

Chlortalidone is a diuretic with actions and uses similar to those of the thiazide diuretics (see Hydrochlorothiazide, p.1310) even though it does not contain a thiazide ring system. It is given orally for hypertension