

Hypersensitivity. Hypersensitivity reactions manifesting as urticaria^{1,2} and fixed drug eruptions³ have been reported with cetirizine.

1. Karamfilov T, *et al.* Cetirizine-induced urticarial reaction. *Br J Dermatol* 1999; **140**: 979–80.
2. Calista D, *et al.* Urticaria induced by cetirizine. *Br J Dermatol* 2001; **144**: 196.
3. Inamadar AC, *et al.* Multiple fixed drug eruptions due to cetirizine. *Br J Dermatol* 2002; **147**: 1025–6.

Sedation. For discussion of the sedative effects of antihistamines see p.562.

Interactions

As for the non-sedating antihistamines in general, p.563. However, some interactions are less likely with cetirizine than with non-sedating antihistamines such as astemizole and terfenadine, since cetirizine appears to have low hepatic metabolism and little arrhythmogenic potential (see Arrhythmias, above).

Anticoagulants. For a report of an interaction between cetirizine and acenocoumarol, see under Interactions in Warfarin, p.1429.

Pharmacokinetics

Cetirizine is rapidly absorbed from the gastrointestinal tract after oral doses, peak plasma concentrations being attained within about an hour. Food delays the time to peak plasma concentrations but does not decrease the amount of drug absorbed. Cetirizine is highly bound to plasma proteins and has an elimination half-life of about 10 hours. It has been detected in breast milk. Cetirizine is excreted primarily in the urine mainly as unchanged drug. It does not appear to cross the blood-brain barrier to a significant extent.

References

1. Awni WM, *et al.* Effect of haemodialysis on the pharmacokinetics of cetirizine. *Eur J Clin Pharmacol* 1990; **38**: 67–9.
2. Desager JP, *et al.* A pharmacokinetic evaluation of the second-generation H₁-receptor antagonist cetirizine in very young children. *Clin Pharmacol Ther* 1993; **53**: 431–5.
3. Pitsi M, *et al.* Retrospective population pharmacokinetic analysis of cetirizine in children aged 6 months to 12 years. *Br J Clin Pharmacol* 2004; **57**: 402–11.
4. Hussein Z, *et al.* Retrospective population pharmacokinetics of levocetirizine in atopic children receiving cetirizine: the ETAC study. *Br J Clin Pharmacol* 2005; **59**: 28–37.

Uses and Administration

Cetirizine hydrochloride, a piperazine derivative and metabolite of hydroxyzine (p.581), is described as a long-acting non-sedating antihistamine with some mast-cell stabilising activity. It appears to have a low potential for drowsiness in usual doses and to be virtually free of antimuscarinic activity. It is used for the symptomatic relief of allergic conditions including rhinitis (p.565) and chronic urticaria (p.565).

In adults and children aged 6 years and over, cetirizine hydrochloride is given in an oral dose of 10 mg once daily or 5 mg twice daily. Children aged 2 to 5 years may be given cetirizine 5 mg once daily or 2.5 mg twice daily. In the USA, children aged 6 months to 2 years may be given a dose of 2.5 mg once daily, increased to a maximum of 2.5 mg twice daily in those aged 12 months and over, for the treatment of perennial allergic rhinitis and chronic urticaria.

It is also used with a decongestant such as pseudoephedrine hydrochloride.

Dosage of cetirizine should be reduced in patients with hepatic or renal impairment, see below.

References

1. Curran MP, *et al.* Cetirizine: a review of its use in allergic disorders. *Drugs* 2004; **64**: 523–61.

Administration in hepatic or renal impairment. In patients with hepatic impairment, US licensed product information recommends that the dosage of cetirizine may need to be reduced to half the usual oral daily dose (see above). Similarly in patients with renal impairment, both the UK and US product information recommends a dosage reduction to half the usual daily dose.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Cabal; Cetidac; Cetizine; Cetinler; Salvalerg; Stopaler; Zyrtec; **Aust.:** Alzene; Zyrtec; **Austria:** Alerid; Cetiderm; Cetirhexal; Cetistad; Ce-

tyrol†; ratioAllerg; Reactine; Rigix; Tirizin; Virlix; Zirtect; **Belg.:** Histimed; Reactine; Zyrtec; **Braz.:** Aletir; Cethexal†; Cetizine; Zetaleg†; Zetir; Zinetrin; Zyrtec; **Canada:** Allergy Relief; Reactine; **Chile:** Alertop; Coolips; Findaler; Histalen; Histax; Remitex; Rigotax; Sanaler; Sixacina; Zyrtec; **Cz.:** Alerid; Analergin; Cerex; Letzen; Parlaizine; Reactine; Virlix†; Zodal; **Denm.:** Alnok; Asytec; Benaday; Cidron; Gardex; Virlix†; Zyrtec; **Fin.:** Alzyr; Cidron†; Gardex; Heinix; Histec; Senirex; Siterin; Zyrtec; **Fr.:** Humex Rhinite Allergique†; Reactine; Virlix; Zyrtec; **Ger.:** Alerid†; Cetalerg†; Ceterfug†; Ceti-Puren†; Ceti†; Cetiderm; Cetidura†; Ceti; CetiLich; Cetingamma; Cetiralan†; Reactine; Zetir; Zyrtec; **Gr.:** Agelmin; Alertran; Alergoxal; Arzedyn; Beboxin; Blezamont; Cetallia; Cetiram; Cetingen; Ceziren†; Cinizine; Dermizin; Enahimine; Gentiran; Habitek; Hamiltosin; Histafren; Kilsol; Lambeta; Ralizon; Remeze; Rezec; Spatanil; Tasker; Telarix; Vitinellin; Zeda; Zepholin; Ziptek; Zirtect†; Znpul†; **Hong Kong:** Adezio; Cethis; Cetin; Cety; Histacet; Histazine; Marzine; Rhinil; Ryvel; Simtec; Vick-Zyrt; Zertine; Zicet; Zyrtec; **Hung.:** Alerid; Cetigen; Cetin; Cetipharmin; Merzin; Parlaizine; Zyrtec; **India:** Alerid; Cetipic; Cetidac; Cetinwal; Cetizet; Cetizine; CTZ; ELG Nil; LGNil; Rinitrin; Zyrtec; **Indon.:** Betarhin; Cerini; Cetrixal; Cetryn; Cetymix; Estin; Falengi; Histrine; Incidal-OD; Ozen; Risina; Rydian; Ryvel; Ryzen; Ryo; Tiriz; Zenniz; **Ir.:** Cetirine; Histek; Ziprine; Zirtect; Zynor; **Israel:** Histazine; Zyllergy; **Ital.:** Formistin; Virlix†; Zyrtec; **Jpn.:** Zyrtec; **Malaysia:** Adezio; Ceritex; Simtec; Zicet; Zyrtec; **Mex.:** Apoliz; Cethexal; Kenicet; Reactine; Trizinet; Virlix; Zyrtec; **Neth.:** Reactine; Revalintabs; Zyrtec; **Norw.:** Acura; Reactine; Virlix†; Zyrtec; **NZ:** Razene; Zyrtec; **Philipp.:** Brellercet; Cet-10; Cetimin; Proxale; Unizef; Virlix; Zine; Zymigin; Zyrtec; **Pol.:** Acer; Alarmed; Alerzina; Allertec; Amertil; Ceratol; CetAlergin; Cetivax; Cetinzen; Cetyryzina; Letizen; Virlix; Zyrtec; Zyx; **Port.:** Cetix; Cinaz; Rinoliber; Virlix; Zyrtec; **Rus.:** Alerza (Алерза); Allertec (Алвертек); Analergin (Аналергин); Cetinax (Цетинакс); Cetrine (Цетрин); Letizen (Летизен); Parlaizine (Парлаизин); Zetralin (Зетринал); Zodal (Зодак); Zyncet (Зинцет); Zyrtec (Зиртек); **S.Afr.:** Allect; Allermin; Tessa; Zetop; Zyrtec; **Singapore:** Adezio; Agelmin†; Allertec†; Alzyte; Cethis; Cetrine; Rhizin†; Sancotec; Terizin; Zyrtec; **Spain:** Alercina; Alerisin; Coulergin; Reactine Plus; Reactine†; Virdox†; Virlix; Voltic†; Zyrtec; **Swed.:** Acura; Alerid; Cidron; Reactine; Zyrlex; **Switz.:** Cerzine; Cet eco; Cetalleg; Cetrine; Histatec; Tobin; Zyrtec; **Thai.:** Aller-cet; Cethis; Cetrimed; Cetrine; Cetrizet; Cetizine; Ceza; Cistamine; Cyzine; Fatec; Histica; Incidal-OD†; Rentrex; Setin; Sutac; Terzine; Tizine; Triz; Unice; Zensil; Zermed; Zertine; Zittec; Zymed; Zyrac; Zyrzine; Zyrcon; Zyrx; Zyrtec; **Turk.:** Allerset; Cetryn; Hitrizin; Resital; Setiral; Virlix; Yeniz; Zyrtec; **UAE:** Cetralon; **UK:** AllerTek; Benadryl Allergy Oral Solution; Benadryl One A Day; Cetrocol†; Hayfever & Allergy Relief; Hayfever Relief; Pinteze; Pollenshield; Zirtect; **USA:** Zyrtec; **Venez.:** Celay; Cetirex; Cetivax; Cetral; Cetrine†; Talzi; Virlix†; Zyrtec.

Multi-ingredient: **Arg.:** Cabal-D; Cetirler D; Zyrtec-D; **Austria:** Cirrus; **Belg.:** Cirrus; Reactine Pseudoephedrine; **Braz.:** Zyrtec-D; **Canada:** Reactine Allergy & Sinus; **Chile:** Alertop-D; Findaler-D; Histalen D; Remitex D; Rigotax-D; Sanaler-D; Zyrtec-D†; **Cz.:** Pronose†; **Fin.:** Cirrus; **Fr.:** Actifed-duo; Humex Rhinite Allergique; **Ger.:** Reactine duo; Zyrtec Duo†; **Hong Kong:** Cirrus; Zyrtec-D; **Hung.:** Zyrtec-D; **India:** Alerid Cold; Alerid D; Amcold; Cheston Cold; **Indon.:** Cirrus; **Ital.:** Naristar; Pronose†; Reactine; **Malaysia:** Cirrus; Zyrtec-D; **Mex.:** Virlix-D; Zyrtec-D; **NZ:** Zyrtec Decongestant; **Pol.:** Cirrus; Zyrtec D; **Port.:** Cirrus; **Singapore:** Cirrus†; **Spain:** Naristar†; Stopcold; Virlix Plus; **Thai.:** Zyrtec-D; **Turk.:** Cirrus; **USA:** Zyrtec-D; **Venez.:** Cetivax D; Zyrtec-D.

Chlorcyclizine Hydrochloride (BANM, rINNM)

Chlorciklizino hidrochloridas; Chlorcyclizine, chlorhydrate de; Chlorcyclizini hydrochloridum; Chlorcyclizinium Chloride; Chlorcyclizin-hydrochlorid; Hidrocloruro de clorciclizina; Kloorisyklitiinihydroklorid; Klorciklizini-hidroklorid; Klorcyclizinhydroklorid. 1-(4-Chlorobenzhydryl)-4-methylpiperazine hydrochloride.

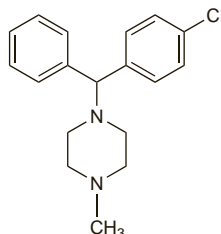
Хлорцикллизина Гидрохлорид

C₁₈H₂₁ClN₂·HCl = 337.3.

CAS — 82-93-9 (chlorcyclizine); 1620-21-9 (chlorcyclizine hydrochloride).

ATC — R06AE04.

ATC Vet — QR06AE04.



(chlorcyclizine)

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

Ph. Eur. 6.2 (Chlorcyclizine Hydrochloride). A white or almost white, crystalline powder. Freely soluble in water and in dichloromethane; soluble in alcohol. A 1% solution in water has a pH of 5.0 to 6.0. Protect from light.

Profile

Chlorcyclizine hydrochloride, a piperazine derivative, is a sedating antihistamine (p.561). It has been given orally for the symptomatic relief of hypersensitivity reactions; it has also been used as an antiemetic. It has been used in topical preparations, although as with other antihistamines, there is a risk of sensitisation.

Chlorcyclizine dibutylate (naftocyclizine) has been used as a cough suppressant similarly to sodium dibutylate (p.1573).

Preparations

Proprietary Preparations (details are given in Part 3)

Denm.: Tihistan†; **Norw.:** Tihistan†.

Multi-ingredient: **Fin.:** Anervan; **Israel:** Temigran; **Neth.:** Primatour; **Norw.:** Anervan; **Spain:** Diminex Antitusigeno; **Swed.:** Anervan; Exolyt.

Chloropyramine Hydrochloride (BANM, rINNM)

Chloropyramine, Chlorhydrate de; Chloropyramini Hydrochloridum; Halopyramine Hydrochloride; Hidrocloruro de cloropiramina. N-(4-Chlorobenzyl)-N-N'-dimethyl-N-(2-pyridyl)ethylenediamine hydrochloride.

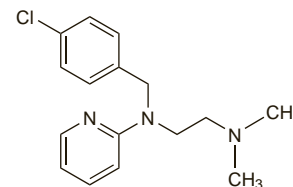
Хлоропирамина Гидрохлорид

C₁₆H₂₀ClN₃·HCl = 326.3.

CAS — 59-32-5 (chloropyramine); 6170-42-9 (chloropyramine hydrochloride).

ATC — D04AA09; R06AC03.

ATC Vet — QD04AA09; QR06AC03.



(chloropyramine)

Profile

Chloropyramine hydrochloride, an ethylenediamine derivative, is an antihistamine (p.561). It has been given orally and by injection.

Preparations

Proprietary Preparations (details are given in Part 3)

Hung.: Suprastin; **Mex.:** Avapena; **Rus.:** Suprastin (Супрастин).

Chlorphenamine Maleate

(BANM, rINNM)

Chlorfenamin-maleinát; Chlorfenamino maleatas; Chlorofenamin maleinain; Chlorphénamine, maléate de; Chlorphenamini maleas; Chlorpheniramine Maleate; Chlorprophenpyridamine Maleate; Kloorifenaminimaleaatti; Klorfenaminmaleat; Klór-fenamin-maleát; Maleato de clorfenamina. (±)-3-(4-Chlorophenyl)-NN-dimethyl-N-(2-pyridyl)propylamine hydrogen maleate.

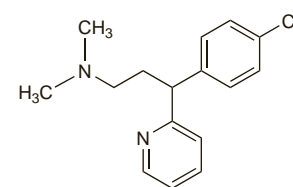
Хлорфенамина Малеат

C₁₆H₁₉ClN₂·C₄H₄O₄ = 390.9.

CAS — 132-22-9 (chlorphenamine); 113-92-8 (chlorphenamine maleate).

ATC — R06AB04.

ATC Vet — QR06AB04.



(chlorphenamine)

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

Ph. Eur. 6.2 (Chlorphenamine Maleate). A white or almost white, crystalline powder. Freely soluble in water; soluble in alcohol. Protect from light.

USP 31 (Chlorpheniramine Maleate). A white, odourless, crystalline powder. Soluble 1 in 4 of water and 1 in 10 of alcohol and of chloroform; slightly soluble in ether and in benzene. Its solutions in water have a pH between 4 and 5. Store in airtight containers. Protect from light.

Incompatibility. Chlorphenamine maleate has been reported to be incompatible with calcium chloride, kanamycin sulfate, noradrenaline acid tartrate, pentobarbital sodium, and meglumine adipodone.

The symbol † denotes a preparation no longer actively marketed

Dexchlorpheniramine Maleate (BANM, rINN^M)

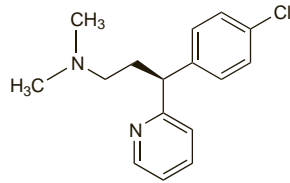
Deksklorfeniramin maleatas; Dekskloorfeniramiinmaleaatti; Dexchlorfeniramin-maleinat; Dexchlorphenamine Maleate; Dexchlorpheniramine, Maléate de; Dexchlorpheniramin maleas; Deksklorfeniraminmaleat; Deksklorfeniramin-maleát; Maleato de dexchlorfeniramina.

Дексхлорфенирамина Малейат

CAS — 25523-97-1 (dexchlorpheniramine); 2438-32-6 (dexchlorpheniramine maleate).

ATC — R06AB02.

ATC Vet — QR06AB02.



(dexchlorpheniramine)

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

Ph. Eur. 6.2 (Dexchlorpheniramine Maleate). A white or almost white, crystalline powder. Very soluble in water; freely soluble in alcohol, in dichloromethane, and in methyl alcohol. A 1% solution in water has a pH of 4.5 to 5.5. Protect from light.

USP 31 (Dexchlorpheniramine Maleate). A white, odourless, crystalline powder. Soluble 1 in 1.1 of water, 1 in 2 of alcohol, 1 in 1.7 of chloroform, and 1 in 2500 of ether; slightly soluble in benzene. pH of a 1% solution in water is between 4.0 and 5.0. Store in airtight containers. Protect from light.

Adverse Effects and Precautions

As for the sedating antihistamines in general, p.561. Exfoliative dermatitis may develop. Injections may be irritant and cause transient hypotension or stimulation of the CNS.

Effects on the blood. There are several old and isolated reports of blood dyscrasias after use of chlorphenamine maleate; these include agranulocytosis,^{1,2} thrombocytopenia,³ pancytopenia,⁴ and aplastic anaemia.⁵ Haemolytic anaemia has occurred after use of dexchlorpheniramine maleate.⁶ The association with antihistamine use has been questioned in some of these cases.⁷

- Shenfield G, Spry CJF. Unusual cause of agranulocytosis. *BMJ* 1968; **ii**: 52–3.
- Hardin AS. Chlorpheniramine and agranulocytosis. *Ann Intern Med* 1988; **108**: 770.
- Eisner EV, et al. Chlorpheniramine-dependent thrombocytopenia. *JAMA* 1975; **231**: 735–6.
- Deringer PM, Maniatis A. Chlorpheniramine-induced bone-marrow suppression. *Lancet* 1976; **i**: 432.
- Kanoh T, et al. Aplastic anaemia after prolonged treatment with chlorpheniramine. *Lancet* 1977; **i**: 546–7.
- Duran-Suarez JR, et al. The I antigen as an immune complex receptor in a case of haemolytic anaemia induced by an antihistaminic agent. *Br J Haematol* 1981; **49**: 153–4.
- Spry CJF. Chlorpheniramine-induced bone-marrow suppression. *Lancet* 1976; **i**: 545.

Effects on the senses. Chlorphenamine has been reported to affect the senses of smell and taste.¹

- Schiffman SS. Taste and smell in disease. *N Engl J Med* 1983; **308**: 1275–9.

Extraparasympathetic disorders. Facial dyskinesias have been reported^{1,2} after oral doses of chlorphenamine maleate.

- Thach BT, et al. Oral facial dyskinesia associated with prolonged use of antihistaminic decongestants. *N Engl J Med* 1975; **293**: 486–7.
- Davis WA. Dyskinesia associated with chronic antihistamine use. *N Engl J Med* 1976; **294**: 113.

Interactions

As for the sedating antihistamines in general, p.563.

Antiepileptics. For a report of the effect of chlorphenamine on phenytoin, see p.499.

Pharmacokinetics

Chlorphenamine maleate is absorbed relatively slowly from the gastrointestinal tract, peak plasma concentrations occurring about 2.5 to 6 hours after oral doses. Bioavailability is low, values of 25 to 50% having been reported. Chlorphenamine appears to undergo considerable first-pass metabolism. About 70% of chlorphenamine in the circulation is bound to plasma proteins. There is wide interindividual variation in the pharmacokinetics of chlorphenamine; values ranging from 2 to 43 hours have been reported for the half-life. Chlorphenamine is widely distributed in the body, and enters the CNS.

Chlorphenamine maleate is extensively metabolised. Metabolites include desmethyl- and didesmethylchlorphenamine. Unchanged drug and metabolites are excreted primarily in the urine; excretion is dependent on urinary pH and flow rate. Only trace amounts have been found in the faeces.

A duration of action of 4 to 6 hours has been reported; this is shorter than may be predicted from pharmacokinetic parameters.

More rapid and extensive absorption, faster clearance, and a shorter half-life have been reported in children.

References

- Rumore MM. Clinical pharmacokinetics of chlorphenamine. *Drug Intell Clin Pharm* 1984; **18**: 701–7.
- Paton DM, Webster DR. Clinical pharmacokinetics of H₁-receptor antagonists (the antihistamines). *Clin Pharmacokinet* 1985; **10**: 477–97.
- Yasuda SU, et al. The roles of CYP2D6 and stereoselectivity in the clinical pharmacokinetics of chlorphenamine. *Br J Clin Pharmacol* 2002; **53**: 519–25.

Uses and Administration

Chlorphenamine maleate, an alkylamine derivative, is a sedating antihistamine that causes a moderate degree of sedation; it also has antimuscarinic activity.

Chlorphenamine is a racemic mixture; the dextrorotatory isomer, dexchlorpheniramine, has about twice the activity of chlorphenamine by weight.

Chlorphenamine maleate and dexchlorpheniramine maleate are used for the symptomatic relief of allergic conditions including urticaria and angioedema (p.565), rhinitis (p.565), and conjunctivitis (p.564), and in pruritic skin disorders (p.565). They are common ingredients of compound preparations for symptomatic treatment of coughs and the common cold (p.564). However, such preparations should be used with caution in children, and generally avoided in those under 2 years of age (see p.562). Chlorphenamine may be given intravenously as an adjunct in the emergency treatment of anaphylactic shock (p.563).

Chlorphenamine maleate is given in oral doses of 4 mg every 4 to 6 hours up to a maximum of 24 mg daily. Doses for children, according to age, are: 1 to 2 years, 1 mg twice daily; 2 to 5 years, 1 mg every 4 to 6 hours (maximum 6 mg daily); 6 to 12 years, 2 mg every 4 to 6 hours (maximum 12 mg daily). Although not licensed in the UK, the *BNFC* suggests that children aged 1 month and over may be given 1 mg twice daily.

Chlorphenamine maleate may be given by intramuscular, by subcutaneous, or by slow intravenous injection over a period of 1 minute. The usual dose is 10 to 20 mg and the total dose given by these routes in 24 hours should not normally exceed 40 mg. For children, doses of 87.5 micrograms/kg subcutaneously four times daily have been suggested. The following parenteral doses may also be used in children: the usual dose in those aged 1 month to 1 year is 250 micrograms/kg; those aged 1 to 5 years may be given a dose of 2.5 to 5 mg and those aged 6 to 12 years, 5 to 10 mg. Alternatively, children and adolescents aged 1 to 18 years may be given a dose of 200 micrograms/kg. The *BNFC* suggests that doses for children may be repeated if necessary up to 4 times in 24 hours.

Dexchlorpheniramine maleate is given in oral doses of 2 mg every 4 to 6 hours up to a maximum of 12 mg daily. Children aged 2 to 5 years may be given 0.5 mg every 4 to 6 hours (maximum 3 mg daily), and those aged 6 to 12 years, 1 mg every 4 to 6 hours (maximum 6 mg daily).

Modified-release oral preparations of chlorphenamine maleate or dexchlorpheniramine maleate are available in some countries; dosage is specific to a particular formulation.

Dexchlorpheniramine maleate has been applied topically in some countries, although as with other antihistamines there is a risk of sensitisation. Chlorphenamine

polistirex (a sulfonated diethenylbenzene-ethenylbenzene copolymer complex), chlorphenamine tannate, and dexchlorpheniramine tannate are given orally and are used similarly to the maleate.

Malaria. Chlorphenamine may be tried in patients with malaria who have chloroquine-induced pruritus (see Effects on the Skin, p.600), but additionally it has been shown to have some promise as an adjunct in the treatment of chloroquine-resistant malaria itself. Early studies indicated that chlorphenamine was only one of a number of drugs that reversed chloroquine resistance *in vitro* in isolates of *Plasmodium falciparum*. Later clinical studies in children in Nigeria showed enhanced efficacy when chlorphenamine was given with chloroquine.^{1–5} The overall management of malaria is discussed on p.594.

- Sowunmi A, et al. Enhanced efficacy of chloroquine-chlorphenamine combination in acute uncomplicated falciparum malaria in children. *Trans R Soc Trop Med Hyg* 1997; **91**: 63–7.
- Sowunmi A, Oduola AMJ. Comparative efficacy of chloroquine/chlorphenamine combination and mefloquine for the treatment of chloroquine-resistant *Plasmodium falciparum* malaria in Nigerian children. *Trans R Soc Trop Med Hyg* 1997; **91**: 689–93.
- Sowunmi A, et al. Comparative efficacy of chloroquine plus chlorphenamine and pyrimethamine/sulfadoxine in acute uncomplicated falciparum malaria in Nigerian children. *Trans R Soc Trop Med Hyg* 1998; **92**: 77–81.
- Sowunmi A, et al. Comparative efficacy of chloroquine plus chlorphenamine and halofantrine in acute uncomplicated falciparum malaria in Nigerian children. *Trans R Soc Trop Med Hyg* 1998; **92**: 441–5.
- Okonkwo CA, et al. Effect of chlorphenamine on the pharmacokinetics of and response to chloroquine of Nigerian children with falciparum malaria. *Trans R Soc Trop Med Hyg* 1999; **93**: 306–11.

Preparations

BP 2008: Chlorphenamine Injection; Chlorphenamine Oral Solution; Chlorphenamine Tablets;

USP 31: Acetaminophen, Chlorpheniramine Maleate, and Dextromethorphan Hydrobromide Tablets; Chlorpheniramine Maleate and Phenylpropanolamine Hydrochloride Extended-release Capsules; Chlorpheniramine Maleate and Phenylpropanolamine Hydrochloride Extended-release Tablets; Chlorpheniramine Maleate and Pseudoephedrine Hydrochloride Extended-release Capsules; Chlorpheniramine Maleate and Pseudoephedrine Hydrochloride Oral Solution; Chlorpheniramine Maleate Extended-release Capsules; Chlorpheniramine Maleate Injection; Chlorpheniramine Maleate Syrup; Chlorpheniramine Maleate Tablets; Dexchlorpheniramine Maleate Syrup; Dexchlorpheniramine Maleate Tablets.

Proprietary Preparations (details are given in Part 3)

Arg.: Ateme; Alergidryl; Alergitrat; Isomerine; Qura Plus; **Austral.:** Polaramine; **Austria:** Polaramin; **Belg.:** Polaramine; **Braz.:** Alergonil; Alergovale; Alergo; Alermine; Deflux; Dextclor; Dextler; Dexmin; Expectamin F; Histamin; Hystin; Polamin; Polaramine; Polaren; Polaryn; **Canada:** Chlor-Tripolon; Novo-Phenir; **Chile:** Asafen Nueva Formula; Clorimeton; Nipelon; Prodel; Scadan; **Dennm.:** Asafen; **Fr.:** Polaramine; **Ger.:** Polaroni; **Gr.:** Istamex; Polaramine; **Hong Kong:** Allermin; Apomin; Chlorpyrimine; Dapriton; Kenyamine; Medifent; Pirimat; **India:** Polaramine; Rhiniramine; Sprinsof; Synchronamin; Uni-Ramine; **India:** Cofton; **Indon.:** Chlorphenon; Cohistan; CTM; Orphen; Pehachlor; Polamec; Polaramine; Polast; Polofar; **Irl.:** Piriton; **Israel:** Ahiston; Anaphyl; **Ital.:** Polaramin; Trimeton; **Malaysia:** Chloramine; Chlormine; Chlorpyrimine; D-Antihist; Dex-Anthist; Dexchloramine; Polamine; Polaramine; Somin; **Mex.:** Alerdil; Antadex-H; Blendox; Cloro-Trimeton; Cronal; Docsi; Hiberbal; Histadryl; Polaramine; **Neth.:** Polaramine; **Norw.:** Phenamin; Polaramin; **NZ:** Histafen; Polaramine; **Philipp.:** Antamin; Barominic; Chlor-Trimeton; Valerimine; **Port.:** Trenelone; **S.Afr.:** Allergex; Chlor-Trimeton; Chlorhist; Polaramine; Rhineton; **Singapore:** Allerphen; Chloramine; Chlorpyrimine; Dexchloramine; Dextramine; Piriton; Polaramine; Rhiniramine; Somin; **Spain:** Antihistaminico; Polaramine; **Swed.:** Polaramin; **Switz.:** Polaramine; **Thai.:** Allergin; Chlorleate; Chlorpheno; Chlorpyrimine; Cohistan; Histab; Histatapp; Icolid Plus; Kloramin; Nasamine; Piriton; **UAE:** Chlorhistol; UK: Allercalm; Allergy Relief; Allerief; Calimal; Hayleve; Piriton; Pollenase Antihistamine; **USA:** Aller-Chlor; Allergy; Allergy Relief; Chlo-Amine; Chlor-Pro; Chlor-Trimeton; Chlor-Tan; Ed-Chlor-Tan; Efidac 24 Chlorpheniramine; PediaCare Allergy Formula; Pediatan; Pediox-S; QDALL AR; TanaHist PD; Teldrin; **Venez.:** Clorotrimeton; Inquiramin; Liramin.

Multi-ingredient: numerous preparations are listed in Part 3.

Chlorphenoxamine Hydrochloride (BANM, rINN^M)

Chlorphénoxamine, Chlorhydrate de; Chlorphenoxamin Hydrochloridum; Hidrocloruro de clorfenoxamina; Klorfenoksamin Hidroklorür; 2-(4-Chloro- α -methylbenzhydryloxy)-*NN*-dimethylethylamine hydrochloride.

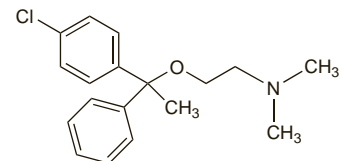
Хлорфеноксамин Гидрохлорид

C₁₈H₂₂ClNO₂·HCl = 340.3.

CAS — 77-38-3 (chlorphenoxamine); 562-09-4 (chlorphenoxamine hydrochloride).

ATC — D04AA34; R06AA06.

ATC Vet — QD04AA34; QR06AA06.



(chlorphenoxamine)