Ingrowing toenails. Liquefied phenol (88%) ablation has been performed as an alternative to surgical avulsion in the treatment of ingrowing toenails. ^{1,2} A systematic review³ concluded that simple nail avulsion combined with treating the nail-bed with phenol was more effective at preventing symptomatic recurrence of ingrowing toenails than cutting out the nail-bed. However, there was a significant increase in postoperative infections when phenol was used.

- 1. Bostanci S, et al. Chemical matricectomy with phenol for the treatment of ingrowing toenail: a review of the literature and follow-up of 172 treated patients. *Acta Derm Venereol* 2001; **81:** 181–3.
- Andreassi A, et al. Segmental phenolization for the treatment of ingrowing toenails: a review of 6 years experience. J Dermatol Treat 2004: 15: 179-81.
- 3. Rounding C, Bloomfield S. Surgical treatments for ingrowing toenails. Available in The Cochrane Database of Systematic Reviews; Issue 1. Chichester: John Wiley; 2003 (accessed

Pain. The neurolytic use of phenol to produce destructive nerve block (see under Pain, p.1852) has produced variable results, and some consider the risk of complications outweighs the benefits. However, it may have the advantage over alcohol that it is painless on injection, and smaller volumes can be used, potentially allowing greater precision (see p.1627).

Urinary incontinence. Although injection of phenol into the pelvic plexus to produce partial denervation has been used in the management of severe intractable urge incontinence, its use has been largely abandoned. Some patients, especially those with detrusor hyperreflexia, have derived benefit 1.2 but overall efficacy can be poor and benefits short-lived.3

- Ewing R, et al. Subtrigonal phenol injection therapy for incontinence in female patients with multiple sclerosis. Lancet 1983; i:
- 2. Blackford HN, et al. Results of transvesical infiltration of the pelvic plexuses with phenol in 116 patients. Br J Urol 1984; 56:
- 3. Rosenbaum TP, et al. Trans-trigonal phenol failed the test of time. Br J Urol 1990; 66: 164-9

Preparations

BP 2008: Aqueous Phenol Injection; Liquefied Phenol; Oily Phenol Injection; Phenol and Glycerol Injection;

BPC 1973: Magenta Paint;
USP 31: Camphorated Phenol Topical Gel; Carbol-Fuchsin Topical Solution; Liquefied Phenol; Phenolated Calamine Topical Suspension.

Proprietary Preparations (details are given in Part 3)

Austral.: Summers Eve Disposable†; Canad.: Chloraseptic Spray, P & S;

Chile: Metapic; S.Afr.: Medi-Keel A; SB Aurico Ear Drops; Septosol; Thai.
Pose-Cresol; UK: Ultra Chloraseptic; USA: Cheracol Sore Throat; Chloraseptic Kids Sore Throat Spray, Chloraseptic Sore Throat; Green Throat Spray, P & S; Phenaseptic; Red Throat Spray, Triaminic Sore Throat Spray,

Ukcrease.

Multi-ingredient: Arg.: Aceite Esmeralda Moone; Callicida; Dermithan; Manzan; Piracalamina; Prurisedan; Prurisedan Rosa; Austral.: Ayrton's Chilblain; Calamine Lotion; Egopsoryl TA; Nyal Toothache Drops; Sarna; Australa; Herposicc; Belg.: Eucalyptine Pholcodine; Sedemol; Sulfa-Sedemol; Braz.: Algidentet; Cioraseptic Dentisan; Otoloide; Pradentet; Timpanolf; Um Instantet; Usedent; Canada: Anbesol Maximum Strength; Blistex DCT Lip Balm; Blistex Lip Medex; Blistex Medicated Lip Conditioner Jar; Blistex Medicated Lip Onitment; Boil Easet; Cepastat: Chapstick Medicated; Braz.: Brulex; Hong Kong: Blistex Lip Ointment; Cepastat; Doans; Egopsoryl TA; Hung: Reparon; Ital: Creosoto Composto; Diarit; Eso Dir; Fuscina Fenica; Lavanda Sofar; Ondroly-A; Pinselian Knapp; Malaysia: Egopsoryl TA; Sarna; Mex.: Forcremol; Neth.: Agre-Gola; NZ: Egopsoryl TA; Toothache Drops; Philipp: Calmoseptine; Sarna; Pol.: Pigmentum Castellani; Port.: Calicida Indiano; S.Afr.: Alpha Toothache Esence; Biohist; Blistex. Calasthetic, Culicurar; Germolene; Lacto Calaminet; Prep; SB Universal Ointment; TCP; Singapore: Cepastat; Egopsoryl TA; Prep; SB Universal Ointment; TCP; Singapore: Cepastat; Egopsoryl TA; Prep; SB Universal Ointment; TCP; Singapore: Cepastat; Egopsoryl TA; Prep; SB Universal Ointment; TCP; Singapore: Cepastat; Egopsoryl TA; sence, Biohist; Blistex; Calasthetic, Cuticura†; Germolene; Lacto Calamine†; Prep; SB Universal Ointment; TCP. Singapore: Capastat; Egopsoryl TA; Sarna; Spain: Argentofenol†; Carbocaina†; Dermomycose Liquido; Odontocromil c Sullamida†; Otocerum; Otogen Calmante; Sabanotropico; Switz.: Caustiner fforte†; Thai.: Con Con; Lanol; Sarna; Zema; Turk.: Disnol; UK: Blistex Relief Cream; Chymol; Colsor; Dermacreme; Germolene; Lacto Calamine; TCP; USA: Anbesol; Blistex, Blistex Lip Balm; Boil Ease; Campho-Phenique; Castaderm; Cepastat: Cepastat Cherry, Chapstick Medicated Lip Balm; Columbia Antiseptic Powder; Debacterol; Heal Aid Plus; Lip Medex; Lipmagik Massengili; Mycinette; Nasal Jelly, Orabase Lip; Orasoi; Phylorinoi; Skeeter Stik; Sting-Eze; Unguentine; Unguentine Plus.

Phenoxyethanol

Ethylene Glycol 2-Monophenyl Ether; Ethyleneglycol Monophenylether; Fenoksietanoli; Fenoksietanolis; Fenoksyetanol; Fenoxietanol; Fenoxyethanol; Phenoxyaethanol; Phénoxyéthanol; Phenoxyethanolum; β-Phenoxyethyl Alcohol; 2-Phenoxyethyl Alcohol. 2-Phenoxyethanol.

$$C_8H_{10}O_2 = 138.2.$$

CAS — 122-99-6.

Pharmacopoeias. In Eur. (see p.vii). Also in USNF.

Ph. Eur. 6.2 (Phenoxyethanol). A colourless slightly viscous liquid. Slightly soluble in water, in arachis oil and in olive oil; miscible with alcohol, with acetone, and with glycerol,

USNF 26 (Phenoxyethanol), A colourless, slightly viscous liguid. Specific gravity 1.105 to 1.110 at 20°. Slightly soluble in water; miscible with alcohol, with acetone, and with glycerol; slightly soluble in arachis oil and in olive oil. Store in a dry place, in airtight containers at a temperature of 8° to 15°. Protect from

Incompatibility. The activity of phenoxyethanol may be reduced by interaction with nonionic surfactants and possibly by adsorption onto PVC.

Profile

Phenoxyethanol is effective against strains of Pseudomonas aeruginosa but less so against other Gram-negative and Gram-positive bacteria. It has been used as a preservative in cosmetics and topical pharmaceuticals at a concentration of 0.5 to 1%. It is often used with other preservatives, commonly hydroxybenzoates, to obtain a wider spectrum of antimicrobial activity.

Phenoxyethanol is used in concentrations of about 2% as an antiseptic for minor infections of skin, wounds, and mucous membranes. Aqueous solutions may be prepared by shaking the phenoxyethanol with hot water until dissolved, then adjusting to final volume when cool. Preparation of the solution can be aided by propylene glycol.

Phenoxypropanol and chlorophenoxyethanol are related compounds used in topical preparations.

Preparations

Proprietary Preparations (details are given in Part 3) Singapore: Acnederm Wash; UK: Biactol Liquid.

Multi-ingredient: Arg.: Gicatul; Polviderm NF; Austral.: Acnederm Foaming Wash: Acnederm Medicated: Austria: Octenisept: Chile: Eucerin Piel Grasa; Fr.: Alco-Aloe; Manugel; Ger.: Gigasept Med†; Lysetol Med†; Octenisept; Gr.: Octenisept; Ital.: Decon Ovuli; Fitostimoline; Malaysia: Acnederm Foaming Wash; Acnederm Lotion; Mex.: Fitoestimulina; Italder-mol; NZ: Acnederm; Acnederm Foaming Wash; Singapore: Acnederm; Switz.: Ederphyt†; Octenisept; USA: Bodi Kleen; Venez.: Glizigen; Photoderm AKN.

Phenoxyisopropanol

Fenoxiisopropanol; Phenoxyisopropyl Alcohol. I-phenoxypropan-2-ol.

 $C_9H_{12}O_2 = 152.2.$ CAS — 770-35-4.

Phenoxyisopropanol is used as a preservative and as an antiseptic in preparations for the treatment of acne, insect bites, and minor abrasions to the skin.

Proprietary Preparations (details are given in Part 3)

Austral.: Clearasil Daily Face Wash.

Phenylmercuric Salts

Fenilmercurio, sales.

Phenylmercuric Acetate

Fenilgyvsidabrio acetatas; Fenil-higany-acetát; Fenilmercurio, acetato de; Fenylhydrargyriumacetát; Fenylkvicksilveracetat; Fenylortęciowy octan; Fenyylimerkuriasetaatti; Phenylhydrargyni acetas; Phenylhydrargyri Acetas; Phénylmercure, acétate de; PMA. (Acetato)phenylmercury.

 $C_8H_8HgO_2 = 336.7.$ CAS — 62-38-4.

Pharmacopoeias. In Eur. (see p.vii). Also in USNF.

Ph. Eur. 6.2 (Phenylmercuric Acetate). A white or yellowish crystalline powder or small, colourless crystals. Slightly soluble in water; soluble in alcohol and in acetone. Protect from light.

USNF 26 (Phenylmercuric Acetate). A white to creamy-white, odourless, crystalline powder or small white prisms or leaflets. Soluble 1 in 180 of water, 1 in 225 of alcohol, 1 in 6.8 of chloroform, and 1 in 200 of ether; soluble in acetone. Store in airtight containers. Protect from light.

Incompatibility. The incompatibilities of phenylmercuric salts are described under Phenylmercuric Nitrate, below.

Phenylmercuric Borate (rINN)

Borato de fenilmercurio; Fenilgyvsidabrio boratas; Fenil-higanyborát; Fenylhydrargyriumborát; Fenylkvicksilverborat; Fenylortęciowy boran; Fenyylimerkuriboraatti; Hydrargyrum Phenyloboricum; Phenomerborum; Phenylhydrargyri boras; Phénylmercure,

Фенилмеркурборат

 $C_6H_5HgOH, C_6H_5HgOB(OH)_2 = 633.2$ or $C_6H_5HgOH, C_6H_5HgBO_2 = 615.2$. — 8017-88-7 (С₁₂H₁₃BHg₂O₄); 6273-99-0 (С₁₂H₁₁BHg₂O₃); 102-98-7 (С₆H₇BHgO₃). ATC — D08AKO2. ATC Vet — ОСС ATC Vet — QD08AK02

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

Ph. Eur. 6.2 (Phenylmercuric Borate). A compound consisting of equimolecular proportions of phenylmercuric orthoborate and phenylmercuric hydroxide ($C_{12}H_{13}BHg_2O_4$) or of the dehydrated form (metaborate, C₁₂H₁₁BHg₂O₃) or a mixture of the two compounds. Colourless shiny crystals or a white or slightly yellowish crystalline powder. Slightly soluble in water and in alcohol. Protect from light.

Incompatibility. The incompatibilities of phenylmercuric salts are described under Phenylmercuric Nitrate, below.

Phenylmercuric Nitrate

Basic Phenylmercury Nitrate; Fenilgyvsidabrio nitratas; Fenil-higany-nitrát; Fenilmercurio, nitrato de; Fenylhydrargyriumnitrát; Fenylkvicksilvernitrat; Fenylortęci(II) azotan; Fenyylimerkurinitraatti; Phenylhydrargyri nitras; Phénylmercure, nitrate de; PMN. Nitratophenylmercury.

 $C_6H_5HgOH, C_6H_5HgNO_3 = 634.4.$ $CAS = 8003-05-2 (C_6H_5HgOH, C_6H_5HgNO_3); 55-68-5$ $(C_6H_5HgNO_3)$. ATC — D09AA04. ATC Vet - QD09AA04.

(C6H5HgOH,C6H5HgNO3)

Pharmacopoeias. In Eur. (see p.vii) and Int. Also in USNF. Ph. Eur. 6.2 (Phenylmercuric Nitrate). A mixture of phenylmercuric nitrate and phenylmercuric hydroxide. A white or pale yellow powder. Very slightly soluble in water and in alcohol; slightly soluble in hot water; dissolves in glycerol and in fatty oils. Protect from light.

USNF 26 (Phenylmercuric Nitrate). A mixture of phenylmercuric nitrate and phenylmercuric hydroxide. A white crystalline powder. Soluble 1 in 600 of water; slightly soluble in alcohol and in glycerol; more soluble in the presence of nitric acid or alkali hydroxides. A saturated solution in water is acid to litmus. Store in airtight containers. Protect from light.

Incompatibility. The activity of phenylmercuric salts may be reduced by interaction with compounds such as kaolin, magnesium trisilicate, starch, and talc. ^{1,2} Disodium edetate and sodium thiosulfate can also produce inactivation.³ Sodium metabisulfite can lead to precipitation,3 or chemical destruction,4 but it can also produce increased activity.3 Other incompatibilities include bromides, iodides (chlorides to a lesser extent), metals, and ammonia and its salts.⁵ There can be adsorption onto rubber and some plastics^{5,6} although sorption by low density polyethylene can be inhibited by phosphate ions.⁷ Some filters, though not membrane filters, used for sterilisation removed considerable amounts of phenylmercuric nitrate from solution.8 The pH may also affect activity.9

- 1. Yousef RT, et al. Effect of some pharmaceutical materials on the bactericidal activities of preservatives. Can J Pharm Sci 1973; 8:
- 2. Horn NR, et al. Interactions between powder suspensions and selected quaternary ammonium and organomercurial preserva-tives. *Cosmet Toilet* 1980; **95:** 69–73.

 Richards RME, Reary JME. Changes in antibacterial activity of
- thiomersal and PMN on autoclaving with certain adjuvants. *J Pharm Pharmacol* 1972; **24** (suppl): 84P–89P.
- Collins AJ, et al. Incompatibility of phenylmercuric acetate with sodium metabisulphite in eye drop formulations. J Pharm Pharmacol 1985; 37 (suppl): 123P.

The symbol † denotes a preparation no longer actively marketed