

5. Carlsen KH, *et al*. Nebulised beclomethasone dipropionate in recurrent obstructive episodes after acute bronchiolitis. *Arch Dis Child* 1988; **63**: 1428–33.
6. Storr J, *et al*. Nebulised beclomethasone dipropionate in preschool asthma. *Arch Dis Child* 1986; **61**: 270–3.
7. Webb MSC, *et al*. Nebulised beclomethasone dipropionate suspension. *Arch Dis Child* 1986; **61**: 1108–10.
8. Clarke SW. Nebulised beclomethasone dipropionate suspension: commentary. *Arch Dis Child* 1986; **61**: 1110.
9. Wilson NM, Silverman M. Treatment of acute, episodic asthma in preschool children using intermittent high dose inhaled steroids at home. *Arch Dis Child* 1990; **65**: 407–10.

**Chronic obstructive pulmonary disease.** For discussion of the value of inhaled corticosteroids in chronic obstructive pulmonary disease, see p.1501.

**Cough.** In children with recurrent cough inhalation of beclomethasone 200 micrograms twice daily from a conventional aerosol or salbutamol 200 micrograms twice daily had no effect on cough frequency or severity.<sup>1</sup> However, in another study of 200 adults, use of beclomethasone, salbutamol, or sodium cromoglicate (all in aerosol formulation) given 15 minutes before anaesthesia, significantly decreased coughing caused by fentanyl when compared with placebo. Of the 50 patients given beclomethasone, none experienced coughing.<sup>2</sup>

1. Chang AB, *et al*. A randomised, placebo controlled trial of inhaled salbutamol and beclomethasone for recurrent cough. *Arch Dis Child* 1998; **79**: 6–11.
2. Agarwal A, *et al*. Salbutamol, beclomethasone or sodium chromoglycate suppress coughing induced by iv fentanyl. *Can J Anaesth* 2003; **50**: 297–300.

**Graft-versus-host disease.** Beclometasone is under investigation for its topical effect in the treatment of intestinal graft-versus-host disease (GVHD). A study<sup>1</sup> in patients with acute intestinal GVHD after bone marrow transplantation (see Haematopoietic Stem Cell Transplantation, p.1811) found that addition of oral beclometasone to prednisolone therapy was associated with a greater proportion of durable responses after 30 days. Repeated courses may be needed in some patients to achieve and maintain response, but prolonged therapy appears to be feasible.<sup>2</sup>

1. McDonald GB, *et al.* Oral beclomethasone dipropionate for treatment of intestinal graft-versus-host disease: a randomized, controlled trial. *Gastroenterology* 1998; **115**: 28–35.
2. Iyer RV, *et al.* Long-term use of oral beclomethasone dipropionate for the treatment of gastrointestinal graft-versus-host disease. *Biol Blood Marrow Transplant* 2005; **11**: 587–92.

**Inflammatory bowel disease.** Beclomethasone 500 micrograms given nightly as an enema was as effective as betamethasone 5 mg enemas in the treatment of acute attacks of distal ulcerative colitis.<sup>1</sup> Although betamethasone produced slightly superior histological improvement and faster disappearance of blood from the stools, systemic adverse effects observed with betamethasone therapy were absent in patients treated with beclomethasone.

Comparisons of beclomethasone dipropionate enemas (3 mg) with prednisolone sodium phosphate enemas<sup>2</sup> (30 mg) or mesalazine enemas<sup>3</sup> (1 g) found them to be equally effective. Treatment was well tolerated. Beclomethasone dipropionate has also been investigated for the oral treatment of ulcerative colitis.<sup>4,5</sup>

For a review of the management of inflammatory bowel disease, including the role of corticosteroids, see p.1697.

- Halpern Z, *et al*. A controlled trial of beclomethasone versus betamethasone enemas in distal ulcerative colitis. *J Clin Gastroenterol* 1991; **13**: 38–41.
- Campieri M, *et al*. Beclomethasone dipropionate enemas versus prednisolone sodium phosphate enemas in the treatment of distal ulcerative colitis. *Aliment Pharmacol Ther* 1998; **12**: 361–6.
- Gionchetti P, *et al*. Italian BDP Study Group. Topical treatment of distal active ulcerative colitis with beclomethasone dipropionate or mesalamine: a single-blind randomized controlled trial. *J Clin Gastroenterol* 2005; **39**: 291–7.
- Rizzello F, *et al*. Oral beclomethasone dipropionate in the treatment of active ulcerative colitis: a double-blind placebo-controlled study. *Aliment Pharmacol Ther* 2002; **16**: 1109–16.
- Campieri M, *et al*. Oral beclomethasone dipropionate in the treatment of extensive and left-sided active ulcerative colitis: a multicentre randomised study. *Aliment Pharmacol Ther* 2003; **17**: 1471–80.

## Preparations

**BP 2008:** Beclomethasone Cream; Beclomethasone Nasal Spray; Beclomethasone Ointment; Beclomethasone Powder for Inhalation; Beclomethasone Pressurised Inhalation.

**Proprietary Preparations** (details are given in Part 3)

**Arg:** Airbecoson; **Egosa:** Menaderm Simple; **Propanet:** Qvar; **Bectomenaderm:** Rinisol; **Austral:** Aldecin; **Becloforte:** Beconase; **Becona:** Hayfever; **Becotide:** Qvar; **Austria:** AeroCortin; **Bedomet:** Beconase; **Becotide:** Cilenil; **Belg:** Beclometatop; **Beclophar:** Beconase; **Becotide:** Qvar; **Broz:** Alerfin; **Bedomet:** Cilenil; **Milifona:** **Canad:** Gen-Beco; **Propaderm:** Qvar; **Rivanase:** **Chile:** Beclosoma; **Beclovento:** Beconase; **Destap:** Filair; **Fumates:** Xiten; **Cz:** Aldecin; **Becloforte:** Beconase; **Becotide:** Becosids; **Becotide:** Cilenil; **Ecobec:** Milifon; **Nasobec:** **Dennm:** AeroBec; **Bedomet:** Beconase; **Fin:** AeroBec; **Bedomet:** Beclo nasal; **Becotide:** **Fr:** Asmabec; **Beclo-Rhino:** Becotide; **Becdone:** Beclospirin; **Becotide:** Bemered; **Ecobec:** Humex Rhume des Fioz; **Milifona:** Nexair; **Prolar:** Qvar; **Spir:** **Ger:** AeroBec; **Beco:** Beclo Sizwof; **Beclobreath:** Beclohexal; **Bedomet:** BecloRhinol; **Becloturnant:** Beconase Aquosum; **Bromocort:** Cilenil; **RatioAler:** Rhiniviv; **Sanasthine:** Becloforte; **Stalair:** Vivalay; **Sw:** **G:** Becloforte; **Becotide:** Becloforte; **Belg:** Cilenil Forte; **Bel:** Cilenil Rhino; **Cilenil:** Qvar; **Resporcort:** Rinisol; **Hong Kong:** Aldecin; **Italy:** Beclozine; **Beco Asmat:** Becloforte; **Becosids:** Beconase; **Becotide:** Cycloson; **Nasobec:** Qvar; **Hung:** Aldecin; **Becloforte:** Beclo nasal; **Ecobec:** **India:** Beclate; **Indon:** Beclomet; **Becona:** Becotide; **Cilenidrm:** **Ir:** AeroBec; **Asmabec:** Beclazone; **Beclo-Rhino:** Becodisks; **Becona:** Becotide; **Nasobec:** Qvar; **Israel:** Becloforte; **Becona:**

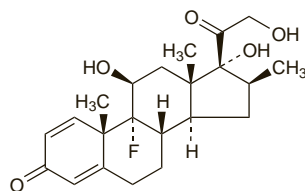
Becotidej; Rhinoclit; Viarex; **Ital:** Becotide; Becotide; A†, Bronco-Turbinal; Clenil; Clenilux; Clipper; Klostenerl; Menaderim Simplex; Propinal; Rino Clenil; Topster; Turbinal; **Jpn:** propaderim; Rhinocort; Salkocot; **Malaysia:** Atomase; Becotide; Becotide; Becloforte†; Beclomet; Beconase; Becotide; Clenil; Qvar; **Mex:** Becadzone; Beconase; Becotide; Dobipro; Riferina; **Neth:** AeroBec†; Aldecin; Beclodin; Becloforte; Beconase; Becotide; Clenil; Qvar; Viarin; **Norw:** AeroBec; Beclomet; Becotide; **NZ:** Alanasas; Atomase; Atomidet; Becadzone; Beconase; Hayveier; Millassone; Qvar; Resp-report; **Philipp:** Qvar; **Pol:** Becodisk; Cortane; Nasobec; **Port:** Aldecin†; Becloforte; Beconase; Clenil; Ecobac; **Rus:** Aldecin (Альдецин); Becadzone (Беклазон); Becloforte (Беклофорте); Beclojet (Беклоджет); Becosid (Бекосидис); Beconase (Беконазе); Becotide (Бекотид); Clenil (Кленил); Nasobec (Насобек); **S.Afr:** AeroBec†; Ancergon; Beczeze; Becotide; Becloforte; Becloforte†; Beconase; Becotide; Clenil†; Cylcosont†; Nobect; Qvar; Ventaze; Viarex†; **Singapore:** Atomase†; Becadzone†; Rino Asma; Becloforte†; Beclomet; Becotide†; Clenil†; Decomit; Qvar†; Rino Clenil†; **Spain:** Asmabec†; Beclo Asma; Beclo Rino; Becloenema; Becloforte†; Beclomet; Beclosona; Beconase; Becotide; Betsuirl†; Broncivert†; Decasona†; Dereme; Menaderim Simple; Qvar†; Recto Menaderim NF; **Swed:** AeroBec; Beclomet; Becotide; **Switz:** AeroBec†; BECO; Becloforte†; Beclomet†; Becloarin; Becloforte; Beconase; Beconasol; Becotide†; **Thai:** Alanasas; Becloforte†; Beclomet; Becodisk; Becotide; Beconase†; Bemase; Clenil; Rino Clenil; **Turk:** Becloforte; Becosids; Becotide; Becloket; Beklaon; Beklaon; Flair; **UAE:** Beclohalo; **UK:** AeroBec; Asmabec; Beczeze; Becadzone; Becloforte†; Becotide; Becodisks; Beconase; Becotide†; Clenil; Clipper; Flair; Hayveier Relief; Nasal-Bec†; Nasobec; Pollenase Nasal; Propaderim†; Pulvinal Beclozetomase Dipropionate; Qvar; Vivabac; **USA:** Beclovent; Beconase; Qvar; Vancenas†; **Venez:** Aldecina†; Beclofortil; Beclomet†; Beclorino; Beclosil; Beconase; Biobeclassona; Biobecloclod; Genbeclo; Nasair; Rinoclenil†.

**Multi-ingredient:** **Arg:** Beclasma; Biotaer Gamma; Biotaer Nebulizable; Butocort; Butosol; Menaderm N; Salbutol Beclor; Ventide; **Austria:** Ventide; **Braz:** Aero-Clonide; Clenil Compositum; **Chile:** Aero-Plus; Aerosoma; Asmavent-B; Beclasma; Belomet; Broncotrelor-B; Butotal B; Herolan Aero-Clon; Ventide; **Cz:** Clenigint; Combair; Formodual; **Fr:** Innovair; **Hong Kong:** Ventide; **India:** Aerocont; Anovate; Beclate-C; Beclate-N; Candiobiotic; Candil B; Candiderma 4; Candiderma; Cloben-G; Cloip B; Cloip NB; Cutinorm; Ecodax; NC-Derm; Otek-AC+; Pilovate; Sigmaderm; Sterob-NM; Translo-Transip; **Indon:** Ventide; **Ital:** Clenil Compositum; Menaderm; Ventolin Fogol; **Mex:** Ventide; **Philipp:** Candil B; **Port:** Formodual; Foster; **Rus:** Candiobiotic (Кандиобиктик); Candil B (КандиАМ 5); **Singapore:** Clenil Compositum; Ventide; **Spain:** Butosol; Menaderm Clon; Menaderm Neomicina; Menaderm Otológico; **Thai:** Clenil Compositum; Ventide; **Turk:** Ventide; **UK:** Foster; **Venez:** Aerocont; Bedomet Compositum; Beclaso; Butosol; Salbutide; Venticort; Ventide.

## Betamethasone (BAN, USAN, rINN) ⊗

Beetametasoni; Betadexamethasone; Betametason; Betametaso-  
na; Betametazon; Betametazonas; Betamethason; Bétaméthas-  
one; Betamethasonum; Flubenisolone; Flubenisolonium; 9 $\alpha$ -  
Fluoro-16 $\beta$ -methylprednisolone;  $\beta$ -Methasone; NSC-39470;  
Sch-4831. 9 $\alpha$ -Fluoro-11 $\beta$ ,17 $\alpha$ ,21-trihydroxy-16 $\beta$ -methylpregna-  
1,4-diene-3,20-dione.

Бетаметазон  
 $C_{22}H_{29}FO_5 = 392.5$ .  
 CAS — 378-44-9.  
 ATC — A07EA04; C05AA05; D07AC01; H02AB01;  
 R01AD06; R03BA04; S01BA06; S02BA07; S03BA03.  
 ATC Vet — Q07EA04; QC05AA05; QD07AC01;  
 QD07XC01; QH02AB01; QR01AD06; QR03BA04;  
 QS01BA06; QS01CB04; QS02BA07; QS03BA03.



**Pharmacopeias.** In *Chin.*, *Eur.* (see p.vii), *Int.*, *Jpn.*, and *US*. **Ph. Eur. 6.2** (Betamethasone). A white or almost white, crystalline powder. Practically insoluble in water; sparingly soluble in dehydrated alcohol; very slightly soluble in dichloromethane. Protect from light.

**USP 31** (Betarethasone). A white to practically white, odorless, crystalline powder. Soluble 1 in 5300 of water, 1 in 65 of alcohol, 1 in 15 of warm alcohol, 1 in 325 of chloroform, and 1 in 3 of methyl alcohol; sparingly soluble in acetone and in dioxan; very slightly soluble in ether. Store in airtight containers at a temperature between 2° and 30°.

**Betamethasone Acetate** (BANM, rINNM) ⊗

Acetato de betametasona; Beetametasoniasetaatti; Betameta-  
sonacetat; Betametazon Asetat; Betametazon-acetát; Betameta-  
zono acetatas; Betamethason-acetát; Bétaméthasone, acétate  
de; Betamethasoni acetas. Betamethasone 21-acetate.

Бетаметазона Ацетат  
 $C_{24}H_{31}FO_6 = 434.5$   
 CAS — 987-24-6.  
 ATC — A07EA04; C05AA05; D07AC01; H02AB01;  
 R01AD06; R03BA04; S01BA06; S02BA07; S03BA03.  
 ATC Vet — QA07EA04; QC05AA05; QD07AC01;  
 QH02AB01; QR01AD06; QR03BA04; QS01BA06;  
 QS02BA07; QS03BA03.

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

**Ph. Eur. 6.2** (Betamethasone Acetate). A white or almost white, crystalline powder. Practically insoluble in water; soluble in alcohol and in dichloromethane; freely soluble in acetone. It shows polymorphism. Protect from light.

**USP 31** (Betamethasone Acetate). A white to creamy-white, odourless powder. Soluble 1 in 2000 of water, 1 in 9 of alcohol, and 1 in 16 of chloroform; freely soluble in acetone. Store in airtight containers at a temperature between 2° and 30°.

### Betamethasone Benzoate (BANM, USAN, rINNM) ⊗

Benzoato de betametasona; Bétaméthasone, Benzoate de; Beta-methasoni Benzoas; W-5975. Betamethasone 17 $\alpha$ -benzoate.

Бетаметазона Бензоат  
 $C_{29}H_{33}FO_6 = 496.6$ .  
 CAS = 22298-29-9.  
 ATC — A07EA04; C05AA05; D07AC01; H02AB01;  
 R01AD06; R03BA04; S01BA06; S02BA07; S03BA03.  
 ATC Vet — QA07EA04; QC05AA05; QD07AC01;  
 QH02AB01; QR01AD06; QR03BA04; QS01BA06;  
 QS02BA07; QS03BA03.

**Pharmacopoeias.** In *US*.

**USP 31** (Betamethasone Benzoate). A white to practically white, practically odourless, powder. Insoluble in water; soluble in alcohol, in chloroform, and in methyl alcohol. Store in airtight containers at a temperature between 2° and 30°.

## Betamethasone Dipropionate

(BANM, USAN, rINN) ⊗  
Beetametasonidipropionaatti; Betametasonidipropionat; Beta-  
metazon Dipropionat; Betametazon-dipropionát; Betametazo-  
no dipropionatas; Betametazonu dipropionian; Betamethason-  
dipropionát; Bétaméthasone, dipropionate; Betamethasoni  
dipropinas; Dipropionato de betametasona; Sch-11460. Beta-  
methasone 17 $\alpha$ ,21-dipropionate.

Бетаметазона Дипропионат  
 $C_{28}H_{37}F_7O_7 = 504.6$ .  
 CAS = 5593-20-4.  
 ATC = A07EA04; C05AA05; D07AC01; H02AB01;  
 R01AD06; R03BA04; S01BA06; S02BA07; S03BA03.  
 ATC Vet = QA07EA04; QC05AA05; QD07AC01;  
 QH02AB01; QR01AD06; QR03BA04; QS01BA06;  
 QS02BA07; QS03BA03.

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

- Co-climasone (*PEN*)—clotrimazole and betamethasone dipropionate.

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

**Ph. Eur. 6.2** (Betamethasone Dipropionate). A white or almost white, crystalline powder. Practically insoluble in water; sparingly soluble in alcohol; freely soluble in acetone and in dichloromethane. Protect from light.

**USP 31** (Betamethasone Dipropionate). A white to cream-white, odourless powder. Insoluble in water; sparingly soluble in alcohol; freely soluble in acetone and in chloroform. Store in airtight containers at a temperature of 25°, excursions permitted between 15° and 30°.

## Betamethasone Sodium Phosphate

(BANM, rHNM) ⊗  
Beetametononatriumfosfaatii; Betametasonnatrifosfatum; Beta-  
metazon Disodium Fosfat; Betametazon-nátrium-foszfát; Beta-  
metazono natrio fosfatas; Betamethasone Disodium Phosphate;  
Bétaméthasone, phosphate sodique de; Betamethason-fosfát  
sodná sůl; Betamethasoni natrii phosphas; Fosfato sódico de  
betametasona; Natrii Betamethasoni Phosphas. Betamethasone 21-  
(disodium phosphate).

Натрия бетаметазона Фосфат  
 $C_{22}H_{28}FNa_2O_8P = 516.4$ .  
 CAS – 360-63-4 (betamethasone phosphate); 151-73-5  
 (betamethasone sodium phosphate).  
 ATC – A07EA04; C05AA05; D07AC01; H02AB01;  
 R01AD06; R03BA04; S01BA06; S02BA07; S03BA03.  
 ATC Vet – QA07EA04; QC05AA05; QD07AC01;  
 QH02AB01; QR01AD06; QR03BA04; QS01BA06;  
 QS02BA07; QS03BA03.

NOTE. BET is a code approved by the BP 2008 for use on single unit doses of eye drops containing betamethasone sodium phosphate where the individual container may be too small to bear all the appropriate labelling information.

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

**Ph. Eur. 6.2** (Betamethasone Sodium Phosphate). A white or almost white, very hygroscopic, powder. Freely soluble in water; slightly soluble in alcohol; practically insoluble in dichloromethane. A 1% solution in water has a pH of 7.5 to 9.0. Store in airtight containers. Protect from light.

**USP 31** (Betamethasone Sodium Phosphate). A white to practically white, odourless, hygroscopic, powder. Soluble 1 in 2 of water and 1 in 470 of alcohol; freely soluble in methyl alcohol; practically insoluble in acetone and in chloroform. Store in airtight containers.

**Betamethasone Valerate** (BANM, USAN, *in*INN) ⓧ

Betametasoni valeraatti; Betametasonvalerat; Betametason Valerat; Betametasono valeratas; Betametasonu valerianian; Betametason-valerát; Bétaméthasone, valérate de; Betamethasoni valeras; Betamethason-valerát; Valerato de betametasona. Betamethasone 17 $\alpha$ -valerate.

Бетаметазона Валерат

C<sub>27</sub>H<sub>37</sub>FO<sub>6</sub> = 476.6.

CAS — 2152-44-5.

ATC — A07EA04; C05AA05; D07AC01; H02AB01; R01AD06; R03BA04; S01BA06; S02BA07; S03BA03.

ATC Vet — QA07EA04; QC05AA05; QD07AC01; QH02AB01; QR01AD06; QR03BA04; QS01BA06; QS02BA07; QS03BA03.

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

**Ph. Eur. 6.2** (Betamethasone Valerate). A white or almost white, crystalline powder. Practically insoluble in water; soluble in alcohol; freely soluble in acetone and in dichloromethane. Protect from light.

**USP 31** (Betamethasone Valerate). A white to practically white, odorless, powder. Practically insoluble in water; soluble 1 in 16 of alcohol, 1 in less than 10 of chloroform, and 1 in 400 of ether; freely soluble in acetone; slightly soluble in benzene. Store in airtight containers.

**Adverse Effects, Treatment, Withdrawal, and Precautions**

As for corticosteroids in general (see p.1490).

Betamethasone has little or no effect on sodium and water retention.

When applied topically, particularly to large areas, when the skin is broken, or under occlusive dressings, or when given intranasally, corticosteroids may be absorbed in sufficient amounts to cause systemic effects. Prolonged use of ophthalmic preparations containing corticosteroids has caused raised intra-ocular pressure and reduced visual function.

**Anosmia.** Complete anosmia was reported in 2 patients after the use of nasal drops containing betamethasone and neomycin sulfate<sup>1</sup> and, in one patient, showed no sign of resolving 1 year later. The reaction was thought to be due to the preservative thiomersal present in the drops, although it was noted that neomycin could exert a toxic effect on the olfactory mucosa and that there have been several reports of anosmia associated with the use of betamethasone alone.

1. Whittet HB, *et al.* Anosmia due to nasal administration of corticosteroid. *BMJ* 1991; **303**: 651.

**Interactions**

The interactions of corticosteroids in general are described on p.1494.

**Pharmacokinetics**

For a brief outline of the pharmacokinetics of corticosteroids, see p.1495. Betamethasone crosses the placenta.

**Uses and Administration**

Betamethasone is a corticosteroid with mainly glucocorticoid activity (p.1490); the anti-inflammatory activity of 750 micrograms of betamethasone is equivalent to about 5 mg of prednisolone. It has been used, either in the form of the free alcohol or in one of the esterified forms, in the treatment of conditions for which corticosteroid therapy is indicated (p.1495), except adrenal-deficiency states for which hydrocortisone with supplementary fludrocortisone is preferred. Its virtual lack of mineralocorticoid properties makes betamethasone particularly suitable for treating conditions in which water retention would be a disadvantage.

The dose is usually expressed in terms of the base, and the following are each equivalent to about 1 mg of betamethasone:

- betamethasone acetate 1.1 mg
- betamethasone benzoate 1.3 mg
- betamethasone dipropionate 1.3 mg
- betamethasone sodium phosphate 1.3 mg
- betamethasone valerate 1.2 mg

When given orally betamethasone or betamethasone sodium phosphate are used; the usual dose, expressed in terms of betamethasone, ranges from 0.5 to 5 mg daily.

For parenteral use the sodium phosphate ester may be given intravenously by injection or infusion or intramuscularly by injection in doses equivalent to 4 to 20 mg of betamethasone. It may also be given by local injection into soft tissues in doses equivalent to 4 to 8 mg of betamethasone. Doses in children, as a slow intravenous injection, are:

- infants aged up to 1 year: the equivalent of 1 mg of betamethasone
- 1 to 5 years: 2 mg
- 6 to 12 years: 4 mg

Doses may be repeated 3 or 4 times in 24 hours if necessary, depending on the condition being treated and the clinical response. The sodium phosphate ester is also sometimes used with the acetate or dipropionate esters, which have a slower and more prolonged action.

Betamethasone sodium phosphate is also used in the topical treatment of allergic and inflammatory conditions of the eyes, ears, or nose, usually as drops or ointment containing 0.1%.

For topical application in the treatment of various skin disorders the dipropionate and valerate esters of betamethasone are extensively used; the usual concentrations available are the equivalent of 0.05% of betamethasone as the dipropionate, and 0.025 or 0.1% as the valerate. For recommendations concerning the correct use of corticosteroids on the skin, and a rough guide to the clinical potencies of topical corticosteroids, see p.1497.

Betamethasone valerate has also been used by inhalation for the prophylaxis of asthma.

Other esters of betamethasone which have occasionally been used include the benzoate, butyrate propionate, phosphate, salicylate (cortobenzolone), and valeroacetate.

Betamethasone adamantoate has been used in veterinary practice.

**Haemangioma.** For reference to the use of a mixture of betamethasone and triamcinolone for the intralesional injection of haemangiomas, see p.1505.

**Inflammatory bowel disease.** For a comparison of betamethasone and beclomethasone enemas in the treatment of ulcerative colitis, see under Beclomethasone, p.1518. Corticosteroids are one of the mainstays of treatment of inflammatory bowel disease, the general management of which is discussed on p.1697.

**Neonatal respiratory distress syndrome.** For a discussion on the antenatal use of betamethasone to prevent neonatal respiratory distress syndrome, see p.1508.

**Preparations**

**BP 2008:** Betamethasone and Cloquinol Cream; Betamethasone and Cloquinol Ointment; Betamethasone Eye Drops; Betamethasone Injection; Betamethasone Sodium Phosphate Tablets; Betamethasone Tablets; Betamethasone Valerate Cream; Betamethasone Valerate Lotion; Betamethasone Valerate Ointment; Betamethasone Valerate Scalp Application;

**USP 31:** Betamethasone Benzoate Gel; Betamethasone Cream; Betamethasone Dipropionate Cream; Betamethasone Dipropionate Lotion; Betamethasone Dipropionate Ointment; Betamethasone Dipropionate Topical Aerosol; Betamethasone Sodium Phosphate and Betamethasone Acetate Injectable Suspension; Betamethasone Sodium Phosphate Injection; Betamethasone Syrup; Betamethasone Tablets; Betamethasone Valerate Cream; Betamethasone Valerate Lotion; Betamethasone Valerate Ointment; Clotrimazole and Betamethasone Dipropionate Cream.

**Proprietary Preparations** (details are given in Part 3)

**Arg.:** Beta Adenil†; Betacort; Betasone-G; Betasone-G 12 Horas; Betatopic; Betnovate; Betnovate Capilar; Blacort; Butasone; Butasona RL; Celestone; Celestone Chronodose; Cevicort; Cevicort NC; Coid; Corteroid; Corteroid Retard; Cortiderma; Cortimar; Cronocorteroid; Cronolevel; Deltalaf; Dermizol; Difenac Forte; Diprocet†; Diprosone; Lazar-Cort; Maxisona†; Metamar; Microsep B; Quacort; Transderma B; Valderm; **Austrel:** Antroquinal; Betnovate; Celestone Chronodose; Celestone M; Celestone VF; Cortival; Diprosone; Eleuphrat; **Austria:** Betnesol; Betnovate; Celestan; Diproderm; Diproforte; Diprophos; Solu-Celestan; **Belg.:** Betnelan-V; Celestone; Celestone Chronodose; Diprolene; Diprosone; **Braz.:** Alersan†; Beclonator; Beclonator; Belta Long; Betaderm; Betametagel; Betapaspam; Betaspam; Betatrin†; Betnelan; Betnelon; Betnovate; Betrat B; Betropam; Betsona; Celestan†; Celestone; Celestone Soluspan; Dermobett†; Dermomil†; Dermoval†; Dermovatt†; Dibetam†; Diprobeta; Diprocort; Diprosen; Diprosone; Diprosan; Duoflam; Koide; Betnovat; **Canad.:** Betaderm; Betaject; Betnesol; Celestoderm†; Celestone Soluspan; Diprolene Glycol; Diprosone; Preveb B; ratio-Ectosone; ratio-Topolene; ratio-Topisone; Tarosone; Topisone†; Valisone; **Chile:** Betnovate†; Cidoten; Cidoten Rapilento; Cidoten V; Coritex; Cremir†; Cronolevel; Dacam; Dacam RL; Diprolene; Diprosan; Disopranil; Konicortil†; Labosona; Oftasona P; Spel; **Cz.:** Beloderm; Beta†; Betesil; Celestone; Celestoderm-V†; Diprophos; Diprosone; Kuterid; **Denn.:** Betnovat; Bettamousse; Celeston; Diproderm; Diprolen; Diprosan; **Fin.:** Bemeton; Betapred; Betnovat; Bettamousse; Celestoderm; Celeston Chronodose; Diproderm; Diprolen; **Fr.:** Betesil; Betnesol; Betneval; Celestene; Celestene Chronodose; Celestoderme; Diprolene; Diprosone; **Ger.:** Bemon; Beta-Stullin†; Beta-Wolff†; BetaCreme; Betagalen; Betam-Optal†; BetaSalbe; Betnesalic mono; Betnesol; Betnesol-V; Celestamine N; Celestan Depot; Celestan Solubile; Celestan-V; Cordes Beta; De-flatop; Diprosin; Diprosone; Diprosone Depot; Linola Cort Beta; Penta-

cort†; Soderm; **Gr.:** Betamatic†; Betnesol; Betnovate; Celestene; Celestoderm-V; Celestone; Celestone Chronodose; Fogozyme; Galinocort; Locason-B†; Locason†; Movithiol; Osmoran; Propiocort; Propioform; Sanovil; **Hong Kong:** Betaderma; Betasone; Betazon; Betnovate; Celestoderm-V†; Celestone†; Derzid; Diprocet; Diprosone; Diprosan; Ectosone†; Symmethasone; **Hung.:** Betesil; Celestone†; Diprophos; **India:** Betafoam; Betnec†; Betnecort; Betnederme; Betnelan; Betnesol; Betnovate; Topicason; Valbet; Walaicort; **Indon.:** Benoson; Betam-Optal†; Betason; Betnovate; Betnedermin; Betopic; Celestoderm-V; Celestone; Corsaderm; Diprosone-OV; Exabet; Mesonta; Metonate; Molason; Oviskin; Proson; Scanderna; Skizon; Vason; **Irl.:** Betacap; Betnelan; Betnesol; Betnovate; Bettamousse; Diprosone; **Israel:** Betacorten; Betnesol; Betnovate; Bettamousse; Celestone Chronodose; Diprolene; Diprosone; Diprosan; **Ital.:** Beben; Betnelan; Beta 21; Betanesol; Betesil; Bettamousse; Celestoderm-V†; Celestone; Celestone Cronodose; Diprosone; Ecovall; **Malaysia:** Beavate; Beprigel; Beprone; Besone; Beta; Betasone; Betnesol†; Betnosone; Betnovate; Bufencon; Celestoderm-V†; Celestone†; Daivobet; Dermasole DP†; Dermasole†; Dibetazol; Diprocet; Diprosone; Diprosan; Setrosone†; Uniflex†; **Mex.:** Betnovate; Celestoderm-V†; Celestone; Celestone Soluspan; Cronolevel; Dermoval; Diprofast; Dipronova; Diprosone; Diprosan; Disons Dex; Erispan; Reubaxona; **Neth.:** Betnelan; Betnesol; Celestoderm; Celestone; Celestone Chronodose; Diprolene; Diprosone; **Norw.:** Betnovat; Bettamousse; Celeston; Diproderm; **NZ:** Beta; Betnesol; Betnovate; Bi-vate; Celestone Chronodose; Diprolene; Diprosone; **Philipp.:** Beta; Betnelan; Betnovate; Celestone; Diprolene; Diprosone; Diprosan; Steroderm; **Pol.:** Celestone; Diprolene; Diprophos; Diprosone; Kuterid; **Port.:** Betnasol; Betnovate; Celestoderm; Celestone; Celestoderme; Dibetop†; Diprolfos; Diprosone; Soluderm; Vabeta; **Rus.:** Akriderm (Акридерм); Beloderm (Белодерм); Betasone (Бетазон); Celestoderm-V (Целестодерм-В); Diprosan (Дипроспан); **S.Afr.:** Betanoid; Betnesol; Betnovate; Celestoderm-V†; Celestone; Celestone Soluspan; Diprolene†; Diprosone; Lenasone; Lenovate; Persivate; Repivate; Steromint†; Topivate; **Singapore:** Beprigel; Beprone; Besone; Betacorten; Betasone; Betnovate; Camnovate; Celestoderm-V†; Celestone†; Dermasone; Derzid; Dibetazol; Diprocet; Diprosone; Diprosan; Uniflex†; **Spain:** Betnovate; Bettamousse; Celestoderm; Celestoderm-V; Celestone; Celestone Chronodose; Diproderm; **Swed.:** Betapred; Betnovat; Bettamousse; Celeston; Celeston bifas; Celeston valerat; Diproderm; Diprolen; **Switz.:** Betnesol; Betnovate; Celestoderm-V; Celestone; Celestone Chronodose; Diprolene; Diprosone; **Thai.:** Bennisan†; Beprigel; Bepronate; Beprone; Besone; Bessasone; Beta; Betameth; Bethasone; Betnovate; Betosone; Bipiro; Clinivate; Derzid; Diprobett†; Diprosone; Diprosan; Diprotop; Polynovate; Preveb B†; Sebo; Valbet; Valerbett†; **Turk.:** Betnovate; Celestoderm-V; Celestone Chronodose; Diprolene; Diprosan; Seroderm; **UAE:** Betasone; **UK:** Betacap; Betnelan; Betnesol; Betnovate; Betnovate RD (Ready Diluted); Bettamousse; Diprosone; Vista-Methasone; **USA:** Alphatrex†; Beta-Val; Cel-U-Jec; Celestone; Celestone Soluspan; Diprolene; Diprosone; Luxig; Maxivate; Teladar†; Valisone; **Venez.:** Beprone; Betacort; Betaderm; Betagen; Betagen Solspan; Betnovate; Celestoderm; Celestone; Celestone Soluspan; Detarmon†; Diprocet; Diprosone; Diprosan; Itsona.

**Multi-ingredient:** **Arg.:** Adenil; Algio Nervomax Fuerte; Antiflogol; Antihemorrhoidal; Bacticort; Bacticort Complex; Bectocort; Betacort Plus; Betametasona B12; Betasalic; Betasone-G Compuesto; Betnovate Antihemorrhoidal†; Betnovate-C; Betnovate-N; Blamy; Blokum B12; Calmurid; Celestamine; Celestamine-L; Cevader; Ciprocort L; Clarityne Cort; Confor-Tar†; Corteroid Gesic; Cortisec; Cortistamin L; Cortistamin NF†; Cuta Crema; Denvercream; Dermizol G; Dermizol Trio; Dermosona; Dermovitt†; Digicogic Plus B12; Dioxaflex B12; Diprogenta; Diprosalic; Doxtran B12; Drum B; Eubetal Biotic†; Factor Dermico; Fucicort; Fusimed B; Gelbiotic Plus; Gentasol; Hifamolin Crema; Histaminol Corteroid L; Ingemet; Lazar-Cort Complex; Lisaler Beta; Lotricomb; Macril; Maxisalic; Mencogin; Micomazol B; Miklogen; Monizol Cort Crema; Negalgel†; Neo-Mudapenil†; Nularef Cort; Oxa B12; Procto-Metadyne; Quadrimed; Quacort G; Quacort G Plus; Rodinac B12; Salicort; Sinaler B; Sirotamicin BG; Sorsis Beta; Toflam; Tribiocort; Triliver; Triplex; Vesalion B12; Virobron B12 NF; Vitacortil; Vixidone LB; Xedenol B12; **Austrel:** Celestone VGF; Daivobet; **Austria:** Betnesol-N; Betnovate-C; Betnovate-N; Celestamin; Diprogenta; Diprosalic; Fucicort; Psorcutan Beta; **Belg.:** Betnelan-VCF†; Diprophos; Diprosalic; Dovobet; Fucicort; Garasone†; Lotiderm; **Braz.:** Betaderm N; Betazol Cort; Betnovate-N; Betnovate-Q; Candicort; Celerg; Celestamil†; Celestamine; Celestrat; Celetil; Celocort; Cetobeta; Cetocort; Cetocorten; Cimcort; Cremederme; Daivobet; Dermosalic; Dexamidine; Dipro AS; Diprogenta; Diprosalic; Emcort; Garasone; Gentacort; Histamed; Koide D; Lestamil; Microbiogen†; Naderm; Novacort; Oto Betnovate; Permuit; Polidermis; Postec; Quadrimed; Quadrikin; Quadriol; Quadriplus; Qualderm; Reumix†; Tetraderm; Trok; Trok-N; Verutux B; **Canad.:** Diprogen†; Diprosalic; Dovobet; Garasone; Lotiderm; Pentasone; ratio-Topsalic; Valisone-G; **Chile:** B-Labotrol†; Betnovate-N†; Cam; Celestamine; Cestop B†; Clofexan; Clotrinim-B; Cobefen; Conalmar; Cremimem-B; Deucalor†; Diproquin; Diprosalic; Diprosan G; Donomix; Fucicort; Gentasone; Gotalgic; Labosalic; Labosona G; Labosona NJ; Locrim; Lotiderm; Mixgen; Novader†; Novamela; Oftagen Compuesto; Oftasona N; Otrandol; Otazol†; Oticum; Otolisal; Plexus; Prodel B; Viltrem†; **Cz.:** Belogent; Belosalic; Betabiopatl†; Daivobet; Diprosalic; Fucicort; Garasone; Lotiderm†; **Denn.:** Betnovat with Chinoform; Betnovat Rektal†; Celeston with Chinoform; Clotrason; Daivobet; Diprosalic; Fucicort; **Fin.:** Bemeton-K; Betnovat Comp†; Betnovat-C; Celestoderm with Chinoform†; Celestoderm comp with Gamarycin; Daivobet; Diprosalic; Fucicort; **Fr.:** Betnasalic†; Betneval-Neomycine†; Celestamine; Daivobet; Diprosalic; Diprosept†; Diprosone Neomycine; Diprostene; **Ger.:** Betadermic; Betagament; Betamethason comp; Betamethason Plus†; Celestamine†; Daivobet; Dermobeta†; Diprogenta; Diprosalic; Fucicort; Lotricomb; Lygal E Tinktur†; Psorcutan Beta; Soderm Plus; Sulmycin with Celestan-V; Terracortin†; **Gr.:** Alpider; Befucil; Betacort; Betafusin; Betasol; Betfu; Betnovate-C; Betnovate-N; Celestoderm-V/GA; Dovobet; Fubecort; Fucicort; Fucicream; Fusibet; Garamat; Propiogenat; Propiosalac; Roseti; Sensibio; Stafficort; **Hong Kong:** Allersan; Aristobet-N; Bechlomin; Beclomil†; Becogem; Betnesalic†; Betnovate-C†; Betnovate-N; Bonjedex; Celestamine; Celestoderm-V with Gamarycin; Clobeteta-G; Conazole; Daivobet; Dermafacte; Derzid-C; Derzid-N†; Dexmin†; Dextrosone; Diprogenta; Diprosalic; Fucicort; Garasone; Lozopin; Lycobeta-G; Quadri-derm; Synbetamine; Triderm; **Hung.:** Daivobet; Diprosalic; Fucicort; Garasone; Gentason; Vipsoal†; **India:** Betamil-GM†; Betamil-M†; Betasalic; Betnederm C; Betnederm GM†; Betnederm N; Betnesol-N; Betnesol-N Nasal; Betnor; Betnovate-C; Betnovate-GM; Betnovate-M†; Betnovate-N; Betnovate-S; Fourderm; Fourderm AF; Gentycin B Eye/Ear†; Quiss; Supirocin-B; Surfax-SN; Topicason with Neomycin; Valbet; **Indon.:** Benoson G; Benoson M; Benoson N; Benoson V; Berloson-N; Betagament; Betasin; Betason-N; Betnovate-N; Bevalac; Biocort; Celestamine; Celestoderm-V with Gamarycin; Colergis; Daivobet; Digenta; Diprogenta; Diprosalic; Diprosta; Exabetin; Fucicort; Garasone; Heltisink; Isotic Betaracin; Krimbeson; Lotiderm; Mastroson; Metaskin-N; Mytaderm; Nilacelin; Ocuson; Polace†; Proson N; Salgen Plus; Scanderna Plus; Skilone; Skinal; Sonigen; Tuderm-N; Zestam; **Irl.:** Betnesol-N; Betnovate-C; Betnovate-N; Diprosalic; Dovobet; Fucibet; Lotiderm; **Israel:** Betacorten-G; Betnesol-N; Betnovate-C; Betnovate-N; Clotrisone; Daivobet; Diprogenta; Diprosalic; Fucicort; Triderm†; **Ital.:** Alfaflor; Butasalgin; Beben; Clorossina; Betabiopatl; Betacream; Betaforlor†; Biorinil; Brumeton Colloide S; Deltavagin; Dermabiolen; Dermat†; Dipro-