

effective, especially in the elderly, in whom the inappropriate prescribing of drugs for postural instability needs to be avoided. Such measures include improving visual acuity, balance exercises, and the use of walking aids.

The most widely used drugs for acute vertigo are the antihistamines. They may have a direct action on the inner ear besides acting centrally. Antimuscarinic actions may contribute to their activity; antimuscarinics, especially hyoscine, have a long history of use in vertigo. Antihistamines used in the treatment of vertigo include buclizine, cyclizine, dimenhydrinate, diphenhydramine, meclozine, and promethazine. Cinnarizine and flunarizine are also used for vertigo although they are devoid of any significant antimuscarinic actions; their activity may be due to calcium-channel blockade. Phenothiazines such as prochlorperazine are also used to control any associated vomiting. Benzodiazepines including diazepam have been given in acute severe attacks. However their prolonged use in those with chronic symptoms is of questionable value.

Vasodilators may be of benefit in the treatment of vertigo of vascular aetiology. Parenteral or sublingual histamine was formerly widely used, and betahistine is still advocated especially for vertigo associated with Ménière's disease. Nicotinic alcohol has also been used.

References.

1. Rascol O, *et al.* Antivertigo medications and drug-induced vertigo: a pharmacological review. *Drugs* 1995; **50**: 777–91.
2. Luxon LM. Vertigo: new approaches to diagnosis and management. *Br J Hosp Med* 1996; **56**: 519–20 and 537–41.
3. Luxon LM. Assessment and management of vertigo. *Prescribers' J* 1998; **38**: 87–97.
4. Baloh RW. Vertigo. *Lancet* 1998; **352**: 1841–6.
5. Hain TC, Uddin M. Pharmacological treatment of vertigo. *CNS Drugs* 2003; **17**: 85–100.

Acrivastine (BAN, USAN, rINN)

Acrivastin; Acrivastina; Acrivastinum; Akrivastini; Akrivastin; BVV-825C. (E)-3-[6-[(E)-3-Pyrrolidin-1-yl-1-p-tolylprop-1-enyl]-2-pyridyl]acrylic acid.

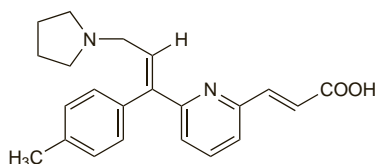
Акривастин

$C_{22}H_{24}N_2O_2 = 348.4$.

CAS — 87848-99-5.

ATC — R06AX18.

ATC Vet — QR06AX18.



Adverse Effects and Precautions

As for the non-sedating antihistamines in general, p.561. Acrivastine should be given with care in renal impairment; UK licensed product information recommends that it should not be given to patients with significant renal impairment, while product information in other countries, such as Switzerland for example, contra-indicates its use in those with a creatinine clearance of less than 50 mL/minute. Acrivastine should not be used in patients hypersensitive to triprolidine.

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

Interactions

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

Pharmacokinetics

Acrivastine is well absorbed from the gastrointestinal tract; peak plasma concentrations are achieved in about 1.5 hours. The plasma half-life of acrivastine is about 1.5 hours and the drug does not appear to cross the blood-brain barrier to a significant extent. Acrivastine along with an active metabolite is excreted principally in the urine.

Uses and Administration

Acrivastine is a non-sedating antihistamine structurally related to triprolidine. It does not have any significant sedative or antimuscarinic actions. It is used for the symptomatic relief of allergic conditions such as rhinitis (p.565) and various types of urticaria (p.565) when it is given in oral doses of 8 mg three times daily. It is also used with a decongestant such as pseudoephedrine hydrochloride.

Administration in renal impairment. See Precautions, above

Preparations

Proprietary Preparations (details are given in Part 3)

Austria: Semprex; **Cz:** Semprex; **Denm:** Benadryl; **Fin:** Benadryl; **Semprex**; **Hong Kong:** Semprex; **Italy:** Semprex; **Malaysia:** Semprex; **Neth:** Semprex; **Philipp:** Semprex; **Rus:** Semprex (Семпрекс); **S.Afr:** Semprex; **Singapore:** Semprex; **Swed:** Semprex; **Switz:** Semprex; **Thai:** Semprex; **Turk:** Semprex; **UK:** Benadryl Allergy Relief.

Multi-ingredient: **Austria:** Duact; **Denm:** Duact; **Fin:** Duact; **Turk:** Duact; **UK:** Benadryl Plus; **USA:** Semprex-D.

Alimemazine Tartrate (BANM, rNNM)

Alimémazine, Tartrate d'; Alimemazini Tartras; Tartrato de alimemazina; Trimeprazine Tartrate. NN-Dimethyl-2-methyl-3-(phenothiazin-10-yl)propylamine tartrate.

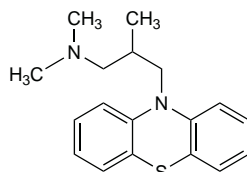
Алимемазина Тартрат

$(C_{18}H_{22}N_2S)_2 \cdot C_4H_6O_6 = 747.0$.

CAS — 84-96-8 (alimemazine); 4330-99-8 (alimemazine tartrate).

ATC — R06AD01.

ATC Vet — QR06AD01.



(alimemazine)

Pharmacopoeias. In *Br.*, *Fr.*, *Jpn.*, and *US*.

BP 2008 (Alimemazine Tartrate). A white or slightly cream powder. It darkens on exposure to light. Freely soluble in water; sparingly soluble in alcohol; very slightly soluble in ether. A 2% solution in water has a pH of 5.0 to 6.5. Protect from light.

USP 31 (Trimeprazine Tartrate). A white to off-white, odourless, crystalline powder. Soluble 1 in 2 of water, 1 in 20 of alcohol, 1 in 5 of chloroform, and 1 in 1800 of ether; very slightly soluble in benzene. Store in airtight containers. Protect from light.

Adverse Effects and Precautions

As for the sedating antihistamines in general, p.561.

Children. There have been reports of adverse effects in children given alimemazine tartrate orally. Fatal malignant hyperthermia¹ and severe cardiovascular depression² have occurred after its use for premedication, and severe respiratory and CNS depression³ after use as a postoperative sedative. Doses in these 3 reports ranged from 2.4 to 4.4 mg/kg. Although unconfirmed, a possible association between phenothiazine sedatives and sudden infant death syndrome has also been suggested (see Promethazine Hydrochloride, p.588). Alimemazine tartrate is no longer licensed in the UK for short-term sedation in children and it is recommended that it should not be used in infants less than 2 years of age (but see below). The maximum recommended oral dose for premedication of children aged 2 to 7 years is 2 mg/kg. There has been a warning⁴ that the use of alimemazine for deep sedation in diagnostic and therapeutic procedures in children is associated with prolonged drowsiness and that standards of monitoring, starvation, and postprocedural care should be similar to those with general anaesthesia.

1. Moyes DG. Malignant hyperpyrexia caused by trimeprazine. *Br J Anaesth* 1973; **45**: 1163–4.
2. Loan WB, Cuthbert D. Adverse cardiovascular response to oral trimeprazine in children. *BMJ* 1985; **290**: 1548–9.
3. Mann NP. Trimeprazine and respiratory depression. *Arch Dis Child* 1981; **56**: 481–2.
4. Cray SH, Hinton W. Sedation for investigations: prolonged effect of chloral and trimeprazine. *Arch Dis Child* 1994; **71**: 179.

Pregnancy. For a discussion of the use of antihistamines in pregnancy, including studies involving phenothiazines, see p.563.

Interactions

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

Uses and Administration

Alimemazine, a phenothiazine derivative, is a sedating antihistamine with antiemetic activity and pronounced sedative effects. It also has some antimuscarinic actions. It is used mainly for the relief of urticaria (p.565) and pruritus (p.565), and, in the UK, for pre-operative medication in children. Alimemazine may also be used in compound preparations for the symptomatic treatment of coughs (p.564).

Alimemazine tartrate is given orally; doses in the UK are given as the amount of alimemazine tartrate, while those in some other countries are expressed in terms of the equivalent amount of alimemazine. Alimemazine tartrate 25 mg is equivalent to about 20 mg of alimemazine.

- The adult dose of alimemazine tartrate used for the relief of **urticaria** and **pruritus** in the UK is 10 mg two or three times daily; up to 100 mg daily has been given in refractory cases. Elderly patients are given 10 mg once or twice daily and children over 2 years of age 2.5 to 5 mg three or four times daily. Despite the view that alimemazine should not be given to younger children (see above), and although not licensed in the UK, the *BNFC* suggests that 250 micrograms/kg (maximum of 2.5 mg) three or four times daily may be given to those aged 6 months to 2 years for the relief of urticaria and pruritus, but only under specialist care.

- Doses used in the USA have been lower, even allowing for them being expressed in terms of alimemazine. The adult dose was the equivalent of alimemazine 2.5 mg four times daily. Children in the USA 3 years of age and over have been given 2.5 mg at night or three times daily. However, it appears that proprietary preparations are no longer available in the USA.

- The usual recommended dose in the UK for **pre-medication** in children aged 2 to 7 years is up to 2 mg/kg given about one to two hours before the operation.

Anaesthesia. Alimemazine tartrate may be used for anaesthetic premedication (see p.563) in children if the oral route is preferred to the more usual parenteral route of other phenothiazine antihistamines. Adverse effects have, however, been reported in children (see under Adverse Effects and Precautions, above), and in the UK alimemazine tartrate is not licensed for use in infants less than 2 years of age.

Insomnia. Antihistamines such as alimemazine tartrate have been used as alternatives to benzodiazepines for the short-term treatment of insomnia (p.564), particularly for children. However, their antimuscarinic side-effects may prove troublesome.

Regimens involving a short course of alimemazine tartrate in high dosage were tried in order to alter the sleep pattern of children with sleeping difficulties.^{1,2} Adverse effects have, however, been reported in children (see under Adverse Effects and Precautions, above). The UK product is no longer indicated for short-term sedation in children and should not be used in infants less than 2 years of age.

1. Valman HB. ABC of 1 to 7 (revised): sleep problems. *BMJ* 1987; **294**: 828–30.
2. Anonymous. What can be done for night waking in children? *Lancet* 1987; **ii**: 948–9.

Preparations

BP 2008: Alimemazine Tablets; Paediatric Alimemazine Oral Solution; Strong Paediatric Alimemazine Oral Solution;

USP 31: Trimeprazine Tartrate Syrup; Trimeprazine Tartrate Tablets.

Proprietary Preparations (details are given in Part 3)

Austral: Chemists Own Peetaxil; Vallergran; **Belg:** Theralene; **Canad:** Panectyl; **Fr:** Theralene; **Ger:** Repellint; **Ir:** Vallergran; **Neth:** Nedeltran; **Norw:** Vallergran; **NZ:** Vallergran; **S.Afr:** Vallergran; **Spain:** Variangil; **Swed:** Theralen; **UK:** Vallergran.

Multi-ingredient: **Fr:** Sirop Teyssedre; Theralene Pectoral Nourmison;.