children is unavoidable, UK licensed product information has suggested that 250 micrograms/kg of the maleate or mesilate may be given orally 2 or 3 times daily to children aged 1 year and over for the prevention and treatment of nausea and vomiting; the intramuscular route is considered unsuitable. However, the *BNFC* suggests giving intramuscular doses, repeated up to 3 times daily if necessary, according to age as follows: 2 to 5 years, 1.25 to 2.5 mg; 5 to 12 years, 5 to 6.25 mg.

In the USA oral, rectal, and intramuscular routes have all been advocated for children aged 2 years and over. The usual oral or rectal antiemetic dose ranges up to 7.5 mg of the base or its equivalent daily in children weighing 10 to 13 kg; in children 14 to 17 kg, up to 10 mg daily; from 18 to 39 kg, up to 15 mg daily. Higher doses have been given for psychoses. The suggested intramuscular dose for children in the USA is the equivalent of about 130 micrograms/kg of base given as a single deep intramuscular injection of the edisilate.

Oral doses of 5 to 10 mg of the maleate or mesilate (or, in the USA, the equivalent of 5 mg of the base) up to 3 or 4 times daily have been used for short-term adjunctive management of **severe anxiety disorders**. A modified-release preparation may be given in doses similar to those used in nausea and vomiting.

Prochlorperazine is also used in the UK in the treatment of **vertigo** including that due to Ménière's disease. It is given *orally* in doses of 15 to 30 mg of the maleate or mesilate daily in divided doses; after several weeks the dose may be gradually reduced to 5 to 10 mg daily. The recommended *buccal* dose of prochlorperazine maleate for this indication is 3 to 6 mg twice daily.

Headache. Some phenothiazines such as prochlorperazine have been used in the control of the symptoms of severe migraine (see p.976). In comparative studies[1,2] prochlorperazine appears to have been more effective in relieving migraine headache and nausea and vomiting than metoclopramide when these drugs were given parenterally. Intravenous prochlorperazine was shown to be effective in aborting intractable migraine in children in a small uncontrolled study.[3]

1. Coppola M, *et al.* Randomized, placebo-controlled evaluation of prochlorperazine versus metoclopramide for emergency department treatment of migraine headache. *Ann Emerg Med* 1995; **26:** 541–6.
2. Jones J, *et al.* Intramuscular prochlorperazine versus metoclopramide as single-agent therapy for the treatment of acute migraine headache. *Am J Emerg Med* 1996; **14:** 262–4.
3. Kabbouche MA, *et al.* Tolerability and effectiveness of prochlorperazine for intractable migraine in children. *Pediatrics* 2001; **107:** 767. Full version: http://pediatrics.aappublications.org/cgi/content/full/107/4/e62 (accessed 28/04/04)

Preparations

BP 2008: Prochlorperazine Buccal Tablets; Prochlorperazine Injection; Prochlorperazine Oral Solution; Prochlorperazine Tablets;
USP 31: Prochlorperazine Edisylate Injection; Prochlorperazine Maleate Tablets; Prochlorperazine Oral Solution; Prochlorperazine Suppositories.

Proprietary Preparations (details are given in Part 3)

Austral.: Stemetil; Stemzine; ***Canad.:*** Apo-Prochlorazine; Nu-Prochlor; Stemetil; ***Denm.:*** Stemetil; ***Fin.:*** Stemetil; ***Hong Kong:*** Dhaperazine; Seratil; Stemetil; ***India:*** Bukatel†; Emidoxyn; Stemetil; Vometil; ***Irl.:*** Buccastem; Stemetil; ***Ital.:*** Stemetil; ***Malaysia:*** Dhaperazine; Nautisol; Prochlor; Stemetil†; ***Neth.:*** Stemetil; ***Norw.:*** Stemetil; ***NZ:*** Antinaus; Buccastem; Stemetil; ***Pol.:*** Chloropernazinum; ***S.Afr.:*** Mitil; Scripto-Metic; Stemetil; ***Singapore:*** Dhaperazine; Prochlor; Stemetil; ***Swed.:*** Stemetil; ***Thai.:*** Proclozine; Stemetil; ***UK:*** Buccastem; Proziere†; Stemetil; ***USA:*** Compazine; Compro.

Multi-ingredient: ***Ital.:*** Difmetre.

Promazine *(BAN, rINN)*

A-145; NSC-31447; Promatsiini; Promazin; Promazina; Promazinum; Propazinum; 3276-RP; RP-3276; WY-1094. *NN*-Dimethyl-3-phenothiazin-10-ylpropylamine.

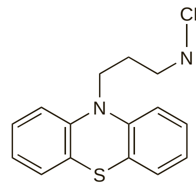
Промазин

$C_{17}H_{20}N_2S$ = 284.4.

CAS — 58-40-2.

ATC — N05AA03.

ATC Vet — QN05AA03.



NOTE. The code A-145 has also been used for *N*-ethylcarbaminomethyl-*L*-isoleucine, a compound investigated as an antineoplastic

Promazine Embonate *(BANM, rINNM)*

Embonato de promazina; Promazine, Embonate de; Promazine Pamoate; Promazini Embonas.

Промазина Эмбонат

$(C_{17}H_{20}N_2S)_2,C_{23}H_{16}O_6$ = 957.2.
ATC — N05AA03.
ATC Vet — QN05AA03.

Promazine Hydrochloride *(BANM, rINNM)*

Hidrocloruro de promazina; Promatsiinihydrokloridi; Promazine, chlorhydrate de; Promazin-hidroklorid; Promazin-hydrochlorid; Promazinhydroklorid; Promazini hydrochloridum; Promazino hidrochloridas; Promazyny chlorowodorek.

Промазина Гидрохлорид

$C_{17}H_{20}N_2S,HCl$ = 320.9.
CAS — 53-60-1.
ATC — N05AA03.
ATC Vet — QN05AA03.

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

Ph. Eur. 6.2 (Promazine Hydrochloride). A white or almost white, slightly hygroscopic, crystalline powder. Very soluble in water, in alcohol, and in dichloromethane. A freshly prepared 5% solution in water has a pH of 4.2 to 5.2. Protect from light.

USP 31 (Promazine Hydrochloride). A white or slightly yellow, practically odourless, crystalline powder. It oxidises upon prolonged exposure to air and acquires a pink or blue colour. Soluble 1 in 3 of water; freely soluble in chloroform. pH of a 1 in 20 solution is between 4.2 and 5.2. Store in airtight containers. Protect from light.

Incompatibility. Incompatibility has been reported between promazine hydrochloride and several other compounds: these include aminophylline, some barbiturates, benzylpenicillin potassium, chlortetracycline, chlorothiazide sodium, dimenhydrinate, heparin sodium, hydrocortisone sodium succinate, phenytoin sodium, prednisolone sodium phosphate, and sodium bicarbonate.

Sorption. A study[1] of drug loss from intravenous delivery systems reported an 11% loss of promazine hydrochloride from solution when infused for 7 hours via a plastic infusion set, and a 59% loss after infusion for one hour from a glass syringe through silastic tubing. Loss was negligible after infusion for 1 hour from a system comprising a glass syringe with polyethylene tubing.

1. Kowaluk EA, *et al.* Interactions between drugs and intravenous delivery systems. *Am J Hosp Pharm* 1982; **39:** 460–7.

Stability. A study of the stability of promazine diluted to a 0.1% infusion in sodium chloride 0.9% or glucose 5% found that solutions in glucose 5% remained stable for up to 6 days at 4°, and at room temperature, provided they were stored in the dark.[1] However, with sodium chloride 0.9% as the diluent, deterioration of promazine was observed 24 hours after preparation, even when stored in the dark, and after 8 hours when exposed to light. Temperature had no effect on degradation rate.

1. Tebbett IR, *et al.* Stability of promazine as an intravenous infusion. *Pharm J* 1986; **237:** 172–4.

Adverse Effects, Treatment, and Precautions

As for Chlorpromazine, p.969.

Pregnancy. An increased incidence of neonatal jaundice coincided with the increased use of promazine.[1] A decrease in the incidence of jaundice was noted 3 months after the total withdrawal of the drug from the hospital although restriction of its use during labour had no impact.

1. John E. Promazine and neonatal hyperbilirubinaemia. *Med J Aust* 1975; **2:** 342–4.

Interactions

As for Chlorpromazine, p.973.

Pharmacokinetics

The pharmacokinetics of promazine appear to be generally similar to those of chlorpromazine (p.975).

Uses and Administration

Promazine is a phenothiazine with general properties similar to those of chlorpromazine (p.975). It has relatively weak antipsychotic activity and is not generally used for the management of psychoses. It is mainly used for the short-term management of agitated or disturbed behaviour (p.954). It has also been given for the alleviation of nausea and vomiting (p.1700). Promazine is given as the hydrochloride by mouth, intramuscularly, or by slow intravenous injection. Promazine has also been given by mouth as the embonate.

For the treatment of **agitated behaviour**, promazine is given in doses equivalent to 100 to 200 mg of the hydrochloride 4 times daily by mouth or 50 mg by intramuscular injection repeated if necessary after 6 to 8 hours. It has also been given by slow intravenous injection in concentrations not exceeding 25 mg/mL, for severely agitated hospitalised patients.

An oral dose of 25 to 50 mg every 4 to 6 hours has been given for the control of **nausea and vomiting**; it has also been given by intramuscular injection for this indication.

Promazine should be given in reduced dosage to elderly or debilitated patients; 25 mg orally of the hydrochloride initially, increasing, if necessary, to 50 mg four times daily has been suggested for the control of agitation and restlessness; for intramuscular injection, a dose of 25 mg may be sufficient.

Hiccup. Promazine hydrochloride has been used in some countries for the treatment of intractable hiccup. A protocol for the management of intractable hiccups may be found under Chlorpromazine, p.976.

Preparations

BP 2008: Promazine Injection; Promazine Tablets;
USP 31: Promazine Hydrochloride Injection; Promazine Hydrochloride Oral Solution; Promazine Hydrochloride Syrup; Promazine Hydrochloride Tablets.

Proprietary Preparations (details are given in Part 3)
Belg.: Prazine†; ***Denm.:*** Sparine†; ***Fin.:*** Sparine†; ***Ger.:*** Protactyl†; Sinophenin†; ***Gr.:*** Sinophenin; Sparine†; ***Ital.:*** Talofen; ***S.Afr.:*** Sparine; ***Switz.:*** Prazine; ***USA:*** Prozine.

Propionylpromazine

Dipropimazine; Propionilpromazina; Propiopromazine.
CAS — 3568-24-9.

Profile

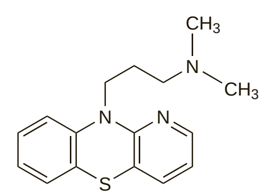
Propionylpromazine is a phenothiazine antipsychotic that has been used for sedation and premedication in veterinary medicine.

Prothipendyl Hydrochloride *(BANM, rINNM)*

D-206; Hidrocloruro de protipendilo; Phrenotropin; Prothipendyl, Chlorhydrate de; Prothipendyli Hydrochloridum. *NN*-Dimethyl-3-(pyrido[3,2-*b*][1,4]benzothiazin-10-yl)propylamine hydrochloride monohydrate.

Протипендила Гидрохлорид

$C_{16}H_{19}N_3S,HCl,H_2O$ = 339.9.
CAS — 303-69-5 (prothipendyl); 1225-65-6 (anhydrous prothipendyl hydrochloride).
ATC — N05AX07.
ATC Vet — QN05AX07.



(prothipendyl)

Profile

Prothipendyl is an azaphenothiazine with general properties similar to those of chlorpromazine (p.969). It is given as the hydrochloride in oral doses of 40 to 80 mg two to four times daily for the treatment of psychoses and agitation, and as an adjunct to analgesics in the treatment of severe pain. Prothipendyl hydrochloride may also be given by injection.

Preparations

Proprietary Preparations (details are given in Part 3)
Austria: Dominal; ***Belg.:*** Dominal; ***Ger.:*** Dominal.