Phentolamine is given in the management of hypertensive crises, particularly those due to excessive catecholamine release associated with surgery for phaeochromocytoma (p.1179). It has been used for the differential diagnosis of phaeochromocytoma, but has largely been superseded by estimations of catecholamines in blood and urine.

Phentolamine is also used to prevent or treat dermal necrosis and sloughing associated with the intravenous infusion or extravasation of noradrenaline. It has been used in the treatment of erectile dysfunction (p.2179).

Phentolamine is given by injection as the mesilate.

In patients with hypertensive crises during surgery for **phaeochromocytoma**, a dose of 2 to 5 mg of phentolamine mesilate is given intravenously and repeated if necessary; blood pressure should be monitored. A dose of 1 mg intravenously is used for children. The intramuscular route may be used pre-operatively and for diagnostic procedures.

For prevention of **dermal necrosis** during intravenous infusion of noradrenaline, 10 mg of phentolamine mesilate is added to each litre of solution containing noradrenaline. For treatment of extravasation of noradrenaline, 5 to 10 mg of phentolamine mesilate in 10 mL of sodium chloride 0.9% is injected into the affected area.

For **erectile dysfunction**, phentolamine mesilate is given by injection into the corpora cavernosa of the penis. It is usually given with papaverine, but a preparation containing phentolamine with aviptadil (vasoactive intestinal peptide) may also be used. Phentolamine has also been tried orally.

Hyperhidrosis. Hyperhidrosis (p.1580) is usually treated with topical aluminium salts or topical antimuscarinics, but intradermal botulinum A toxin or procedures such as endoscopic transthoracic sympathectomy may be needed in severe cases. Phentolamine has been tried as an alternative. Improvement in symptoms has been reported[1] in 2 patients with generalised hyperhidrosis given 100 mg of phentolamine mesilate by intravenous infusion over 6 hours. Improvement lasted for 2 to 3 months and the infusion was repeated, in 1 patient several times.

1. McCleane G. The use of intravenous phentolamine mesilate in the treatment of hyperhidrosis. *Br J Dermatol* 2002; **146:** 533–4.

Pain. Sympathetic nerve block (p.1853) is used in a number of pain syndromes and usually involves injection of local anaesthetics. Phentolamine has been used as an alternative and beneficial results have been reported in pain associated with chronic pancreatitis,[1] pancreatic and other visceral cancers,[2,3] and chronic gastroparesis.[4]

Complete resolution of pain has also been reported in 2 patients with cutaneous leiomyomata given oral doxazosin.[5]

1. McCleane GJ. Phentolamine abolishes the pain of chronic pancreatitis. *Br J Hosp Med* 1996; **55:** 521.
2. McCleane GJ. Intravenous phentolamine mesylate alleviates the pain of pancreatic carcinoma. *Pain* 1997; **73:** 263–4.
3. Yasukawa M, *et al.* Intravenous phentolamine infusion alleviates the pain of abdominal visceral cancer, including pancreatic carcinoma. *J Anesth* 2007; **21:** 420–3.
4. Phillips WJ, *et al.* Relief of acute pain in chronic idiopathic gastroparesis with intravenous phentolamine. *Ann Pharmacother* 2006; **40:** 2032–6.
5. Batchelor RJ, *et al.* Successful treatment of pain in two patients with cutaneous leiomyomata with the oral alpha-1 adrenoceptor antagonist, doxazosin. *Br J Dermatol* 2004; **150:** 775–6.

Preparations

BP 2008: Phentolamine Injection;
USP 31: Phentolamine Mesylate for Injection.

Proprietary Preparations (details are given in Part 3)
Arg.: Regitina; ***Austral.:*** Regitine; ***Belg.:*** Regitine; ***Braz.:*** Herivyl; Regitina†; Vigamed; ***Canad.:*** Rogitine; ***Denm.:*** Regitin; ***Gr.:*** Regitine; Rogitine†; ***Hung.:*** Regitine; ***Israel:*** Regitine; ***Mex.:*** Z-Max†; ***Neth.:*** Regitine; ***NZ:*** Invicorp; Regitine; ***S.Afr.:*** Regitine†; ***Switz.:*** Regitine; ***UK:*** Rogitine; ***USA:*** Regitine†; ***Venez.:*** Regitina†.

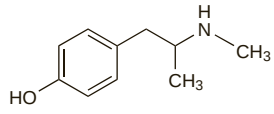
Multi-ingredient: ***Austria:*** Androskat; ***Neth.:*** Androskat; ***USA:*** Tri-Mix.

Pholedrine Sulfate *(rINNM)* ⊗

Isodrine Sulphate; Pholédrine, Sulfate de; Pholedrine Sulphate *(BANM)*; Pholedrini Sulfas; Sulfato de foledrina; Sympropaminum (pholedrine). 4-(2-Methylaminopropyl)phenol sulfate.

Фоледрина Сульфат

$(C_{10}H_{15}NO)_2,H_2SO_4$ = 428.5.
CAS — 370-14-9 (pholedrine); 6114-26-7 (pholedrine sulfate).



(pholedrine)

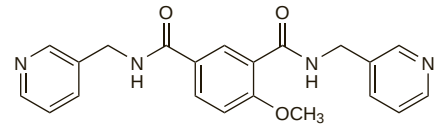
Profile
Pholedrine is a sympathomimetic (p.1407) used in the treatment of hypotensive states. It is usually given orally as the sulfate, often in combination with other drugs, and has also been included in preparations promoted for vascular disorders. Pholedrine eye drops have been used as an alternative to hydroxyamfetamine (p.2322) in the diagnosis of Horner's syndrome.

Preparations
Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Ger.:*** Adyston†; Zellaforte N Plus†; ***Switz.:*** Ortho-Maren retard.

Picotamide *(BAN)*

G-137; Picotamida; Picotamide, monohydrate de; Picotamidmonohidrát; Picotamidum monohydricum; Pikotamid monohydrát; Pikotamidimonohydraatti; Pikotamidmonohydrat; Pikotamido monohidratas. 4-Methoxy-*N*,*N*′-bis(3-pyridinylmethyl)-1,3-benzenedicarboxamide monohydrate.

$C_{21}H_{20}N_4O_3,H_2O$ = 394.4.
CAS — 32828-81-2 (anhydrous picotamide); 80530-63-8 (picotamide monohydrate).
ATC — B01AC03.
ATC Vet — QB01AC03.



Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Picotamide Monohydrate). A white or almost white, polymorphic, crystalline powder. Slightly soluble in water; soluble in dehydrated alcohol and in dichloromethane; dissolves in dilute mineral acids.

Profile
Picotamide is a thromboxane synthase inhibitor and thromboxane receptor antagonist with antiplatelet activity. It is given by mouth in thromboembolic disorders (p.1187) in initial doses of 900 to 1200 mg daily in divided doses, reducing to a maintenance dose of 300 to 600 mg daily.

ACE inhibitor-induced cough. Cough is a recognised adverse effect of ACE inhibitors and has been treated with a number of drugs (see p.1194). Picotamide led to the disappearance of cough in 8 of 9 patients receiving enalapril for hypertension,[1] suggesting that thromboxanes may be involved in the aetiology of ACE inhibitor-induced cough.

1. Malini PL, *et al.* Thromboxane antagonism and cough induced by angiotensin-converting-enzyme inhibitor. *Lancet* 1997; **350:** 15–18.

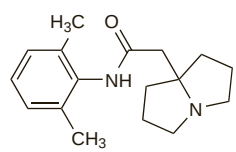
Preparations
Proprietary Preparations (details are given in Part 3)
Ital.: Plactidil.

Pilsicainide Hydrochloride *(rINNM)*

Hidrocloruro de pilsicainida; Pilsicaïnide, Chlorhydrate de; Pilsicainidi Hydrochloridum; SUN-1165. Tetrahydro-1*H*-pyrrolizine-7a(5*H*)-aceto-2′,6′-xylidide hydrochloride.

Пильсикаинида Гидрохлорид

$C_{17}H_{24}N_2O,HCl$ = 308.8.
CAS — 88069-67-4 (pilsicainide); 88069-49-2 (pilsicainide hydrochloride).



(pilsicainide)

Profile
Pilsicainide hydrochloride is an antiarrhythmic with class Ic activity (p.1153).

◊ References.
1. Takabatake T, *et al.* Pharmacokinetics of SUN 1165, a new antiarrhythmic agent, in renal dysfunction. *Eur J Clin Pharmacol* 1991; **40:** 411–14.
2. Okishige K, *et al.* Pilsicainide for conversion and maintenance of sinus rhythm in chronic atrial fibrillation: a placebo-controlled, multicenter study. *Am Heart J* 2000; **140:** 437–44.
3. Kumagai K, *et al.* Single oral administration of pilsicainide versus infusion of disopyramide for termination of paroxysmal atrial fibrillation: a multicenter trial. *Pacing Clin Electrophysiol* 2000; **23:** 1880–2.
4. Ogawa R, *et al.* Population pharmacokinetic and pharmacodynamic analysis of a class IC antiarrhythmic, pilsicainide, in patients with cardiac arrhythmias. *J Clin Pharmacol* 2006; **46:** 59–68.
5. Kumagai K, *et al.* Pilsicainide for atrial fibrillation. *Drugs* 2006; **66:** 2067–73.

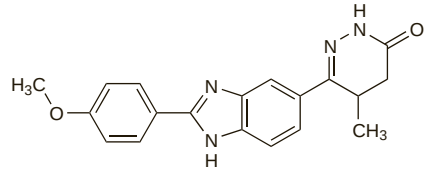
Preparations
Proprietary Preparations (details are given in Part 3)
Jpn: Sunrythm.

Pimobendan *(BAN, USAN, rINN)*

Pimobendaani; Pimobendán; Pimobendanas; Pimobendane; Pimobendanum; UDCG-115. 4,5-Dihydro-6-[2-(*p*-methoxyphenyl)-5-benzimidazolyl]-5-methyl-3(2*H*)-pyridazinone.

Пимобендан

$C_{19}H_{18}N_4O_2$ = 334.4.
CAS — 74150-27-9; 118428-36-7.
ATC Vet — QC01CE90.



Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Pimobendan). A white or slightly yellowish, hygroscopic powder. Practically insoluble in water; slightly soluble in acetone and in methyl alcohol; freely soluble in dimethylformamide. Store in airtight containers.

Profile
Pimobendan is a phosphodiesterase inhibitor with calcium-sensitising properties. It has positive inotropic and vasodilator activity and is used as an adjunct to standard therapy in the management of heart failure (p.1165). It is given orally in a dose of 1.25 to 2.5 mg twice daily.

Studies with other inotropic phosphodiesterase inhibitors have shown that their prolonged oral use can lead to an increased mortality rate.

◊ References.
1. Przechera M, *et al.* Pharmacokinetic profile and tolerability of pimobendan in patients with terminal renal insufficiency. *Eur J Clin Pharmacol* 1991; **40:** 107–11.
2. The Pimobendan in Congestive Heart Failure (PICO) Investigators. Effect of pimobendan on exercise capacity in patients with heart failure: main results from the Pimobendan in Congestive Heart Failure (PICO) trial. *Heart* 1996; **76:** 223–31.
3. Yoshikawa T, *et al.* Effectiveness of carvedilol alone versus carvedilol + pimobendan for severe congestive heart failure. *Am J Cardiol* 2000; **85:** 1495–7.
4. The EPOCH Study Group. Effects of pimobendan on adverse cardiac events and physical activities in patients with mild to moderate chronic heart failure: the effects of pimobendan on chronic heart failure study (EPOCH study). *Circ J* 2002; **66:** 149–57.

Preparations
Proprietary Preparations (details are given in Part 3)
Jpn: Acardi.

Pinacidil *(USAN, rINN)*

P-1134; Pinacidilum; Pinasidiili. (±)-2-Cyano-1-(4-pyridyl)-3-(1,2,2-trimethylpropyl)guanidine.

Пинацидил

$C_{13}H_{19}N_5$ = 245.3.
CAS — 60560-33-0 (anhydrous pinacidil); 85371-64-8 (pinacidil monohydrate).
ATC — C02DG01.
ATC Vet — QC02DG01.