Molsidomine is metabolised to linsidomine (p.1325), an active metabolite.

Carcinogenicity. Molsidomine tends to degrade into morpholine (even when protected from the light), a compound considered potentially carcinogenic. This finding led to the suspension of marketing of one molsidomine formulation;[1] an earlier temporary suspension was related to evidence of carcinogenicity in some *animals*, although this has not been confirmed in humans.

1. Anonymous. Corvaton Tropfen. *Dtsch Apotheker Ztg* 1989; **129** (49): VI.

Myocardial infarction. Although intravenous nitrates (glyceryl trinitrate or sodium nitroprusside) may be used in the management of acute myocardial infarction (p.1175), molsidomine and its active metabolite linsidomine (a nitric oxide donor) had no effect on mortality.[1]

1. European Study of Prevention of Infarct with Molsidomine (ESPRIM) Group. The ESPRIM trial: short-term treatment of acute myocardial infarction with molsidomine. *Lancet* 1994; **344:** 91–7.

Pharmacokinetics. The pharmacokinetics of molsidomine have been reviewed.[1] Molsidomine is metabolised in the liver to linsidomine and other morpholine derivatives. Prolonged elimination half-lives of molsidomine and linsidomine due to reduced plasma clearance have been reported in patients with liver cirrhosis.[2]

1. Rosenkranz B, *et al.* Clinical pharmacokinetics of molsidomine. *Clin Pharmacokinet* 1996; **30:** 372–84.
2. Spreux-Varoquaux O, *et al.* Pharmacokinetics of molsidomine and its active metabolite, linsidomine, in patients with liver cirrhosis. *Br J Clin Pharmacol* 1991; **32:** 399–401.

Preparations

Proprietary Preparations (details are given in Part 3)
Arg.: Molsicor; Molsidaine; ***Austria:*** Molsidolat; Molsihexal; ***Belg.:*** Coruno; Corvatard†; Corvaton; ***Cz.:*** Corvaton; Molsihexal; Molsiket; ***Fr.:*** Corvasal; ***Ger.:*** Corvaton; duracoron†; Molsi-Azu†; Molsi-Puren; Molsi†; Molsibeta; Molsihexal; molsiket; ***Hung.:*** Corvaton; ***Port.:*** Corvaton†; ***Rus.:*** Dilasidom (Диласидом); Sydnopharm (Сиднофарм); ***Spain:*** Corpea; Molsidain; ***Switz.:*** Corsifar†; Corvaton.

Monteplase *(rINN)*

E-6010; Monteplasa; Montéplase; Monteplasum.

Монтеплаза

$C_{2569}H_{3896}N_{746}O_{783}S_{39}$ = 59009.5.
CAS — 156616-23-8.

Profile

Monteplase is a thrombolytic related to alteplase (p.1207) that is used in acute myocardial infarction (p.1175) and venous thromboembolism (p.1189). For acute myocardial infarction, the usual dose is 27 500 units/kg given by intravenous injection as soon as possible after the onset of symptoms. For pulmonary embolism, the usual dose is 13 750 units/kg to 27 500 units/kg.

◊ References.

1. Kawai C, *et al.* A prospective, randomized, double-blind multicenter trial of a single bolus injection of the novel modified t-PA E6010 in the treatment of acute myocardial infarction: comparison with native t-PA. *J Am Coll Cardiol* 1997; **29:** 1447–53.
2. Inoue T, *et al.* A new thrombolytic agent, monteplase, is independent of the plasminogen activator inhibitor in patients with acute myocardial infarction: initial results of the COmbining Monteplase with Angioplasty (COMA) trial. *Am Heart J* 2002; **144:** E5.
3. Inoue T, *et al.* Long-term benefits of monteplase before coronary angioplasty in acute myocardial infarction. *Am J Cardiol* 2005; **95:** 506–8.
4. Inoue T, *et al.* Therapeutic potential of monteplase in acute myocardial infarction. *Am J Cardiovasc Drugs* 2005; **5:** 225–31.

Preparations

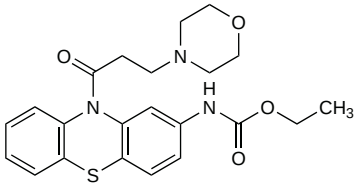
Proprietary Preparations (details are given in Part 3)
Jpn: Cleactor.

Moracizine *(BAN, rINN)*

EN-313; Moracizina; Moracizinum; Moricizine *(USAN)*. Ethyl [10-(3-morpholinopropionyl)phenothiazin-2-yl]carbamate.

Морацизин

$C_{22}H_{25}N_3O_4S$ = 427.5.
CAS — 31883-05-3.
ATC — C01BG01.
ATC Vet — QC01BG01.



Moracizine Hydrochloride *(BANM, rINNM)*

Hidrocloruro de moracizina; Moracizine, Chlorhydrate de; Moracizinhydroklorid; Moracizini Hydrochloridum; Morasitsiinihydrokloridi.

Морацизина Гидрохлорид

$C_{22}H_{25}N_3O_4S$,HCl = 464.0.
CAS — 29560-58-5.
ATC — C01BG01.
ATC Vet — QC01BG01.

Pharmacopoeias. In *Chin.* and *US*.
USP 31 (Moricizine Hydrochloride). A white to off-white crystalline powder. Soluble in water and in alcohol. Store in airtight containers.

Adverse Effects

The most common adverse effects associated with moracizine affect the CNS and the gastrointestinal tract and include dizziness, headache, fatigue, nausea, and abdominal pain. Other adverse effects include dyspnoea, dry mouth, blurred vision, impotence, and urinary-tract disorders. There have been occasional reports of fever, thrombocytopenia, hepatic dysfunction, hypothermia, and skin rash.

Like other antiarrhythmics moracizine can provoke or worsen arrhythmias. This may range from an increase in the frequency of premature ventricular contractions to induction or worsening of ventricular tachycardia.

An increased mortality rate occurred when moracizine was tested in the control of asymptomatic ventricular arrhythmias in post-infarction patients (see Cardiac Arrhythmias under Uses and Administration, below).

Effects on body temperature. Fever with elevated creatine phosphokinase and hepatic transaminase concentrations was associated with moracizine in 2 patients.[1] The fever abated within 48 hours of stopping moracizine and recurred within 24 hours of rechallenge in both patients. Results suggested a similarity to the neuroleptic malignant syndrome that is associated with other phenothiazine derivatives.

1. Miura DS, *et al.* Ethmozine toxicity: fever of unknown origin. *J Clin Pharmacol* 1986; **26:** 153–5.

Precautions

As for Flecainide Acetate, p.1288.

Interactions

Use of moracizine with other antiarrhythmics or arrhythmogenic drugs may increase the incidence of cardiac arrhythmias. Moracizine undergoes metabolism in the liver and its activity may be influenced by other drugs affecting the enzymes responsible for its metabolism; it is an enzyme inducer and may also affect the activity of other hepatically-metabolised drugs.

Pharmacokinetics

Moracizine is readily and almost completely absorbed from the gastrointestinal tract. It undergoes significant first-pass hepatic metabolism so that the oral bioavailability is about 38%. Moracizine is extensively metabolised and some of the numerous metabolites may be active. It induces its own metabolism; the plasma elimination half-life is about 2 hours after multiple doses. Although plasma concentrations are reduced with multiple dosing, clinical response is not affected. It is about 95% bound to plasma proteins. Moracizine is distributed into breast milk. About 56% of a dose is excreted in the faeces and about 39% in the urine.

◊ References.

1. Benedek IH, *et al.* Enzyme induction by moricizine: time course and extent in healthy subjects. *J Clin Pharmacol* 1994; **34:** 167–75.

Uses and Administration

Moracizine is a phenothiazine compound that has class I antiarrhythmic activity (p.1153) but does not readily fall into the subclasses a, b, or c. It is used as the hydrochloride in the treatment of serious symptomatic ventricular arrhythmias. Moracizine hydrochloride is given orally in a usual dose of 600 to 900 mg daily in 2 or 3 divided doses. Treatment should be started in hospital, and doses should be adjusted at intervals of not less than 3 days. Doses should be reduced in patients with hepatic or renal impairment (see below).

◊ Reviews.

1. Clyne CA, *et al.* Moricizine. *N Engl J Med* 1992; **327:** 255–60.

Administration in hepatic or renal impairment. The initial dose of moracizine hydrochloride in hepatic or renal impairment should be 600 mg or less daily and patients should be monitored closely (including ECG) before any adjustment of dose is made.

Cardiac arrhythmias. Moracizine is effective in various arrhythmias but is usually reserved for life-threatening ventricular arrhythmias; like other class I antiarrhythmics (see Cardiac Arrhythmias under Flecainide, p.1289), it has been associated with increased mortality when used prophylactically after myocardial infarction,[1] and is not recommended in such patients. However, there is limited evidence that it may be useful in some patients with supraventricular arrhythmias.[2,3]

1. The Cardiac Arrhythmia Suppression Trial II Investigators. Effect of the antiarrhythmic agent moricizine on survival after myocardial infarction. *N Engl J Med* 1992; **327:** 227–33.
2. Mehta AV, *et al.* Experience with moricizine HCl in children with supraventricular tachycardia. *Int J Cardiol* 1996; **57:** 31–5.
3. Geller JC, *et al.* Efficacy and safety of moricizine in the maintenance of sinus rhythm in patients with recurrent atrial fibrillation. *Am J Cardiol* 2001; **87:** 172–7.

Preparations

USP 31: Moricizine Hydrochloride Tablets.

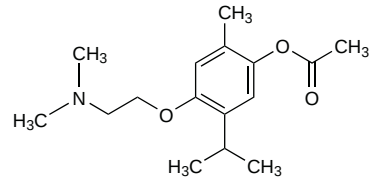
Proprietary Preparations (details are given in Part 3)
USA: Ethmozine†.

Moxisylyte Hydrochloride *(BANM, rINNM)*

Hidrocloruro de moxisilita; Moksisylyyttihydrokloridi; Moxisilita Clorhidrato; Moxisylyte, Chlorhydrate de; Moxisylythydroklorid; Moxisylyti Hydrochloridum; Moxisylytum Hydrochloridum; Thymoxamine Hydrochloride. 4-(2-Dimethylaminoethoxy)-5-isopropyl-2-methylphenyl acetate hydrochloride.

Моксизилита Гидрохлорид

$C_{16}H_{25}NO_3$,HCl = 315.8.
CAS — 54-32-0 (moxisylyte); 964-52-3 (moxisylyte hydrochloride).
ATC — C04AX10; G04BE06.
ATC Vet — QC04AX10; QG04BE06.



(moxisylyte)

NOTE. MOX, formerly THY, is a code approved by the BP 2008 for use on single unit doses of eye drops containing moxisylyte hydrochloride where the individual container may be too small to bear all the appropriate labelling information.

Pharmacopoeias. In *Br.*
BP 2008 (Moxisylyte Hydrochloride). A white, odourless or almost odourless, crystalline powder. Freely soluble in water and in chloroform; soluble in alcohol; practically insoluble in ether and in petroleum spirit. A 5% solution in water has a pH of 4.5 to 5.5. Protect from light.

Adverse Effects

Moxisylyte hydrochloride may cause nausea, diarrhoea, headache, vertigo, flushing of the skin, dry mouth, and nasal congestion. Hepatotoxicity has been reported. Overdosage may cause hypotension.

Transient ptosis has occurred occasionally after ophthalmic application. Prolonged erections or priapism have occurred rarely after intracavernosal injection and systemic effects may also occur.

Effects on the liver. Hepatic adverse reactions with moxisylyte first appeared in France after its use in benign prostatic hyperplasia, a condition in which relatively high doses were used (up to 480 mg daily compared with up to 320 mg daily for peripheral vascular disease). Since then the UK CSM has received reports associated with lower doses.[1] Thirteen hepatic reactions, accounting for 17% of all reports of suspected adverse reactions to moxisylyte, had been received. These comprised 3 cases of hepatic function abnormalities, 3 of jaundice, 4 of cholestatic jaundice, 2 of hepatitis, and 1 of hepatitis with jaundice. In most cases the reaction occurred within 5 weeks of the start of treatment and resolved on drug withdrawal. In 9 cases the dosage of moxisylyte was known and varied from 80 to 320 mg daily with 7 patients receiving 160 mg or less daily.

1. Committee on Safety of Medicines/Medicines Control Agency. Hepatic reactions with thymoxamine (Opilon). *Current Problems* 1993; **19:** 11–12. Also available at: http://www.mhra.gov.uk/home/idcplg?IdcService=GET_FILE&dDocName=CON2024456&RevisionSelectionMethod=LatestReleased (accessed 10/04/08)

Precautions

Moxisylyte hydrochloride should not be given to patients with active liver disease and should be given with care to patients with diabetes mellitus as it may theoretically decrease insulin requirements. Monitoring of liver function is recommended, especially if therapy is prolonged or if high doses are being used. Intracavernosal injection of moxisylyte is contra-indicated in patients with conditions that predispose to priapism.

Interactions

Moxisylyte may enhance the effects of antihypertensives and the hypotensive effect of moxisylyte may be enhanced by tricyclic antidepressants.

Uses and Administration

Moxisylyte is an alpha-adrenoceptor blocker with vasodilating activity. It is used by mouth in the treatment of peripheral vascular disease (p.1178) and has been self-administered by intracavernosal injection in erectile dysfunction (p.2179).

Moxisylyte is given as the hydrochloride but the dose may be expressed in terms of the base. Moxisylyte hydrochloride 45.2 mg is equivalent to about 40 mg of moxisylyte.

In the management of **peripheral vascular disease**, the usual oral dose is the equivalent of 40 mg of moxisylyte four times daily increased if necessary to 80 mg four times daily. It should be withdrawn if there is no response in 2 weeks.

Moxisylyte has been used locally in the eye to reverse the mydriasis caused by phenylephrine and other sympathomimetics. It has also been used orally in benign prostatic hyperplasia, although such use has been associated with hepatotoxicity; the doses used in prostatic hyperplasia were generally higher than those in peripheral vascular disease.

◊ Reviews.

1. Marquer C, Bressolle F. Moxisylyte: a review of its pharmacodynamic and pharmacokinetic properties, and its therapeutic use in impotence. *Fundam Clin Pharmacol* 1998; **12:** 377–87.

Preparations

BP 2008: Moxisylyte Tablets.

Proprietary Preparations (details are given in Part 3)
Fr.: Carlytene; Icavex†; ***Irl.:*** Opilon; ***Port.:*** Arlitene†; ***UK:*** Opilon.

Moxonidine *(BAN, USAN, rINN)*

BDF-5895; BDF-5896; BE-5895; LY-326869; Moksonidi; Moksonidiini; Moksonidin; Moksonidinas; Moxonid; Moxonidin; Moxonidina; Moxonidinum; Moxonidum. 4-Chloro-5-(2-imidazolin-2-ylamino)-6-methoxy-2-methylpyrimidine.

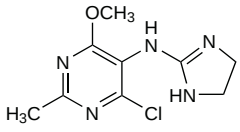
Моксонидин

$C_9H_{12}ClN_5O$ = 241.7.

CAS — 75438-57-2.

ATC — C02AC05.

ATC Vet — QC02AC05.



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

Ph. Eur. 6.2 (Moxonidine). A white or almost white powder. Very slightly soluble in water and in acetonitrile; slightly soluble in dichloromethane; sparingly soluble in methyl alcohol.

Adverse Effects and Treatment

Moxonidine has similar adverse effects to clonidine (p.1247) but causes less sedation. The incidence of dry mouth may also be lower.

Precautions

Moxonidine should not be used in patients with conduction disorders, bradycardia, severe arrhythmias, severe heart failure, severe ischaemic heart disease, severe hepatic or renal impairment, or a history of angioedema. Licensed product information suggests that it should also be avoided in patients with intermittent claudication or Raynaud's disease, Parkinson's disease, epilepsy, glaucoma, and depression. Moxonidine is distributed into breast milk and should not be used during breast feeding.

Although rebound hypertension has not been reported after moxonidine withdrawal it should not be stopped abruptly but should be withdrawn gradually over 2 weeks. As for clonidine (p.1247), if patients are also receiving a beta blocker, this should be stopped several days before moxonidine is withdrawn.

Interactions

The hypotensive effect of moxonidine may be enhanced by other antihypertensives and drugs that cause hypotension. The effect of sedatives and hypnotics, including benzodiazepines, may be enhanced by moxonidine.

Pharmacokinetics

Moxonidine is well absorbed when given orally and has a bioavailability of about 88%. Peak plasma concentrations occur 0.5 to 3 hours after an oral dose. It is excreted almost entirely in the urine as unchanged drug and metabolites; about 50 to 75% of an oral dose is excreted as unchanged drug. The mean plasma elimination half-life is 2 to 3 hours and is prolonged in renal impairment. Moxonidine is about 7% bound to plasma proteins. It is distributed into breast milk.

Uses and Administration

Moxonidine is a centrally acting antihypertensive structurally related to clonidine (p.1247). It appears to act through stimulation of central imidazoline receptors to reduce sympathetic tone, and also has $alpha_2$-adrenoceptor agonist activity. It is used in the treatment of hypertension (p.1171) and has also been investigated for heart failure (but see below).

In the treatment of hypertension, moxonidine is given orally in a usual initial dose of 200 micrograms once daily. The dose may be increased if necessary, after 3 weeks, to 400 micrograms daily as a single dose or in 2 divided doses, and after a further 3 weeks, to a maximum dose of 600 micrograms daily in 2 divided doses. The dose should be reduced in patients with renal impairment (see below).

◊ References.

1. Chrisp P, Faulds D. Moxonidine: a review of its pharmacology, and therapeutic use in essential hypertension. *Drugs* 1992; **44:** 993–1012.
2. Schachter M, *et al.* Safety and tolerability of moxonidine in the treatment of hypertension. *Drug Safety* 1998; **19:** 191–203.
3. Bousquet P, Feldman J. Drugs acting on imidazoline receptors: a review of their pharmacology, their use in blood pressure control and their potential interest in cardioprotection. *Drugs* 1999; **58:** 799–812.
4. Schachter M. Moxonidine. *Prescribers' J* 1999; **39:** 113–17.
5. Fenton C, *et al.* Moxonidine: a review of its use in essential hypertension. *Drugs* 2006; **66:** 477–96.

Administration in renal impairment. UK licensed product information states that in patients with moderate renal impairment (GFR 30 to 60 mL/minute) single doses of moxonidine should not exceed 200 micrograms and the daily dose should not exceed 400 micrograms; moxonidine should not be given in severe impairment (GFR less than 30 mL/minute).

Heart failure. Heart failure is usually treated with diuretics, ACE inhibitors, and beta blockers (see p.1165). Beta blockers are thought to act by suppressing the sympathetic nervous system, which is activated in heart failure. Centrally-acting antihypertensives such as moxonidine also suppress sympathetic activation and might therefore have a role in heart failure. A study[1] in patients with heart failure found that moxonidine reduced plasma-noradrenaline concentrations and increased left ventricular ejection fraction, but also led to an increase in adverse effects. A further study[2] was stopped early due to increased mortality in the group receiving moxonidine.

1. Swedberg K, *et al.* Effects of sustained-release moxonidine, an imidazoline agonist, on plasma norepinephrine in patients with chronic heart failure. *Circulation* 2002; **105:** 1797–1803.
2. Cohn JN, *et al.* Adverse mortality effect of central sympathetic inhibition with sustained-release moxonidine in patients with heart failure (MOXCON). *Eur J Heart Fail* 2003; **5:** 659–67.

Preparations

Proprietary Preparations (details are given in Part 3)
Austral.: Physiotens; ***Austria:*** Monox; Moxin; Normoxin; ***Belg.:*** Gilutens†; Moxon; ***Braz.:*** Cynt; ***Cz.:*** Cynt; Moxogamma; Moxostad; Physiotens; ***Denm.:*** Moxonat; Physiotens; ***Fin.:*** Physiotens; ***Fr.:*** Physiotens; ***Ger.:*** Cynt; Moxobeta; Moxocard; moxodura; Moxogamma; Physiotens; ***Gr.:*** Cynt; Fisiotens; ***Hong Kong:*** Physiotens; ***Hung.:*** Cynt; Moxogamma; Moxostad; Physiotens; ***Indon.:*** Physiotens; ***Ital.:*** Fisiotens; ***Malaysia:*** Physiotens; ***Neth.:*** Moxamar; Moxaviv; Moxoham; Moxonur; Moxotel; Moxovasc; Normatens; Ratiomox; ***Norw.:*** Physiotens; ***Philipp.:*** Physiotens; ***Pol.:*** Moxogamma; Physiotens; ***Port.:*** Moxon; ***Rus.:*** Cynt (Цинт)†; Physiotens (Физиотенз); ***S.Afr.:*** Physiotens; ***Singapore:*** Physiotens†; ***Spain:*** Moxon; ***Swed.:*** Physiotens; ***Switz.:*** Physiotens; ***Turk.:*** Cynt; ***UK:*** Physiotens.

Nadolol *(BAN, USAN, rINN)* ⊗

Nadololi; Nadololis; Nadololum; SQ-11725. (2*R*,3*S*)-5-(3-*tert*-Butylamino-2-hydroxypropoxy)-1,2,3,4-tetrahydronaphthalene-2,3-diol.

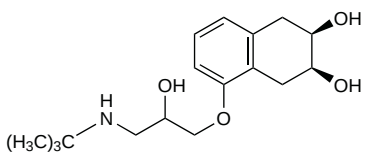
Надолол

$C_{17}H_{27}NO_4$ = 309.4.

CAS — 42200-33-9.

ATC — C07AA12.

ATC Vet — QC07AA12.



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

Ph. Eur. 6.2 (Nadolol). A white or almost white crystalline powder. Slightly soluble in water; freely soluble in alcohol; practically insoluble in acetone.

USP 31 (Nadolol). A white or off-white, practically odourless, crystalline powder. Soluble in water at pH 2; slightly soluble in water at pH 7 to 10; freely soluble in alcohol and in methyl alcohol; insoluble in acetone, in ether, in petroleum spirit, in trichloroethane, and in benzene; slightly soluble in chloroform, in dichloromethane, and in isopropyl alcohol.

Adverse Effects, Treatment, and Precautions

As for Beta Blockers, p.1226.

Breast feeding. Nadolol is distributed into breast milk and concentrations in milk are higher than those in maternal plasma. In a study[1] in 12 normotensive women given nadolol 80 mg daily by mouth for 5 days, the mean nadolol concentration in milk for the 24 hours after the last dose was 357 nanograms/mL; the equivalent mean serum-nadolol concentration was only 77 nanograms/mL. It was calculated that a 5-kg infant would therefore ingest about 2 to 7% of an equivalent adult dose. No adverse effects have been seen in breast-fed infants whose mothers were given nadolol and the American Academy of Pediatrics considers[2] that it is therefore usually compatible with breast feeding.

1. Devlin RG, *et al.* Nadolol in human serum and breast milk. *Br J Clin Pharmacol* 1981; **12:** 393–6.
2. American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001; **108:** 776–89. Correction. *ibid.*; 1029. Also available at: http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/3/776 (accessed 10/01/08)

Hypersensitivity. Hypersensitivity pneumonitis was associated with nadolol in a patient given the drug for migraine.[1] Symptoms improved when nadolol was withdrawn.

1. Levy MB, *et al.* Nadolol and hypersensitivity pneumonitis. *Ann Intern Med* 1986; **105:** 806–7.

Interactions

The interactions associated with beta blockers are discussed on p.1228.

Pharmacokinetics

Nadolol is incompletely absorbed from the gastrointestinal tract to give peak plasma concentrations about 3 or 4 hours after a dose. It has low lipid solubility. Nadolol is widely distributed and concentrations found in breast milk have been higher than those in serum. It is only about 30% bound to plasma proteins. It does not appear to be metabolised and is excreted mainly in the urine. The plasma half-life has been reported as ranging from about 12 to 24 hours. Nadolol is reported to be dialysable.

◊ In 4 patients with mild hypertension given nadolol 2 mg orally or intravenously, the elimination half-life from plasma was an average of 10 to 12 hours (a range of 5.9 to 12.2 hours after intravenous doses, and a range of 9.6 to 14.2 hours after oral doses). Calculations based on urinary excretion and plasma concentration data suggested that about 33% was absorbed after oral dosage. There was evidence of biliary as well as urinary excretion since after intravenous dosage about 73% was excreted in urine and 23% in faeces. Nadolol did not appear to be metabolised.[1] In a similar study of therapeutic oral doses, terminal half-lives ranging from 14 to 17 hours were reported for nadolol 80 mg given as a single dose and the same dose daily in a multiple dosage regimen.[2]

1. Dreyfuss J, *et al.* Metabolic studies in patients with nadolol: oral and intravenous administration. *J Clin Pharmacol* 1977; **17:** 300–7.
2. Dreyfuss J, *et al.* Pharmacokinetics of nadolol, a beta-receptor antagonist: administration of therapeutic single- and multiple-dosage regimens to hypertensive patients. *J Clin Pharmacol* 1979; **19:** 712–20.

Children. The pharmacokinetics of nadolol given intravenously and orally were studied in six children aged 3 months to 14 years.[1] The elimination half-lives for the two oldest children aged 10 and 14 years were 7.3 and 15.7 hours, respectively. These values are similar to those reported for adults whereas in the children 22 months of age or younger, shorter half-lives of 3.2 to 4.3 hours were found. The shorter half-lives were probably a result of a reduction in the total apparent volume of distribution of nadolol in the youngest children. Elimination rates were similar after either intravenous or oral dosage.

1. Mehta AV, *et al.* Pharmacokinetics of nadolol in children with supraventricular tachycardia. *J Clin Pharmacol* 1992; **32:** 1023–7.

Uses and Administration

Nadolol is a non-cardioselective beta blocker (p.1225). It is reported to lack intrinsic sympathomimetic and