Myocardial Infarction

Early Intervention after acute myocardial infarction: For patients suitable for treatment with intravenous beta-blockade and presenting within 12 hours of the onset of chest pain. Hypoten 5-10 mg should be given by slow intravenous injection (1 mg/minute) followed by Hypoten 50 mg orally about 15 minutes later, provided no untoward effects have occurred from the intravenous dose. This should be followed by a further 50 mg orally 12 hours after the intravenous dose and then 12 hours later by 100 mg orally, once daily. If bradycardia and/or hypotension requiring treatment, or any other untoward effects occur, Hypoten should be discontinued.

Late intervention after acute myocardial infarction: For patients who present some days after suffering an acute myocardial infarction an oral dose of Hypoten (100 mg daily) is recommended for long-term prophylaxis for myocardial infarction.

Elderly
Dosage requirements may be reduced, especially in patients with impaired renal function.

Children
There is no pediatric experience with Hypoten, and for this reason it is not recommended for use in children.

Renal Failure
Since Hypoten is excreted via the kidneys, the dosage should be reduced in cases of severe impairment of renal function.

No significant accumulation of Hypoten occurs in patients who have a creatinine clearance greater than 35 ml/min/l, 73 m² (normal range is (100-150 ml/min/1.73 m²)

For patients with a creatinine clearance of 15-35 ml/min/l.73 m² (equivalent to serum creatinine of 300-600 micromol/litre) the oral dose should be 50 mg daily and the intravenous dose should be 10 mg once every two days.
For patients, with creatinine clearance of <15 ml/min/1.73 m² (equivalent to serum creatinine of >600 micromol/litre) the oral dose should be 25 mg daily or 50 mg on alternate days and the intravenous dose should be 10 mg once every two days. Patients on haemodialysis should be given 50 mg orally after each dialysis; this should be done under hospital supervision as marked falls in blood pressure can occur.

CONTRAINDICATIONS
Hypoten, as with other beta-blockers, should not be used in patients with any of the following: known hypersensitivity to the active substance, or any of the excipients; bradycardia (<45 bpm); cardiogenic shock; hypotension; metabolic acidosis; severe peripheral arterial circulatory disturbances; second or third degree heart block; Sick sinus syndrome; untreated phaeochromocytoma; uncontrolled heart failure.

WARNINGS AND PRECAUTIONS
Hypoten as with other beta-blockers:
- Should not be withdrawn abruptly. The dosage should be withdrawn gradually over a period of 7-14 days, to facilitate a reduction in beta-blocker dosage. Patients should be followed during withdrawal, especially those with ischemic heart disease.
- When a patient is scheduled for surgery, and a decision is made to discontinue beta-blocker therapy, this should be done at least 24 hours prior to the procedure. The risk-benefit assessment of stopping beta-blockade should be made for each patient. If treatment is continued, an anesthetic with little negative inotropic activity should be selected to minimize the risk of myocardial depression. The patient may be protected against vagal reactions by intravenous administration of atropine.
- Although contraindicated in uncontrolled heart failure, may be used in patients whose signs or heart failure have been controlled. Caution must be exercised in patients whose cardiac reserve is poor.
- May increase the number and duration of angina attacks in patients with Prinzmetal's angina due to unopposed alpha-receptor mediated coronary artery vasoconstriction. Hypoten is a beta 1¬-selective beta-blocker; consequently. Its use may be considered although caution must be exercised.
- Although contraindicated in severe peripheral arterial circulatory disturbances, may also aggravate less severe peripheral arterial circulatory disturbances.
- Due to its negative effect on conduction time, caution must be exercised if it is given to patients with first degree heart block.
- May mask the symptoms of hypoglycemia, in particular, tachycardia.
- May mask the signs of thrombosis.
- Will reduce heart rate, as a result of its pharmacological action. In the rare instances when a treated patient develops symptoms which may be attributable to a slow heart rate and the pulse rate drops to less than 50-55 bpm at rest, the dose should be reduced.
- May cause a more severe reaction to a variety of allergens, when given to patients with a history of anaphylactic reaction to such allergens. Such patients may be unresponsive to the usual doses of adrenaline used to treat the allergic reactions.
- May cause a hypersensitivity reaction including angioedema and urticaria.
- Should be used with caution in the elderly, starting with a lesser dose.

Since Hypoten is excreted via the kidneys; dosage should be reduced in patients with a creatinine clearance below 35 ml/min/l, 7 m². Although cardio selective (beta1) beta-blockers may have less effect on lung function than non-selective beta-blockers, as with all, beta-blockers, these should be avoided in patients with reversible obstructive airways disease, unless there are compelling clinical reasons for their use. Where such reasons exist, Hypoten may be used with caution. Occasionally, some increase in airways resistance may occur in asthmatic patients, however, and this may usually be reversed by commonly used dosage of bronchodilators such as Salbutamol or Isoprenaline.

As with other beta-blockers, in patients with a phaeochromocytoma, an alpha-blocker should be given concomitantly.
agents causing myocardial depression are best avoided.

**Pregnancy and lactation**
Hypoten crosses the placental barrier and appears in the cord blood. No studies have been performed on the use of Hypoten in the first trimester and the possibility of fetal injury cannot be excluded.

Hypoten has been used under close supervision for the treatment of hypertension in the third trimester. Administration of Hypoten to pregnant women in the management of mild to moderate hypertension has been associated with intra-uterine growth retardation. The use of Hypoten in women who are, or may become pregnant requires that the anticipated benefit be weighed against the possible risks, particularly in the first and second trimesters, since beta-blockers, in general, have been associated with a decrease in placental perfusion which may result in intra-uterine deaths, immature and premature deliveries.

There is significant accumulation of Hypoten in breast milk. Neonates born to mothers who are receiving Hypoten at parturition or breast-feeding may be at risk for hypoglycemia and bradycardia. Caution should be exercised when Hypoten is administered during pregnancy or to a woman who is breast-feeding.

**Effect on ability to drive and use machines**
Use is unlikely to result in any impairment of the ability of patients to drive or operate machinery. However it should be taken into account that occasionally dizziness or fatigue may occur.

**SIDE EFFECTS**
Hypoten is well tolerated. In clinical studies, the undesired events reported are usually attributable to the pharmacological actions of atenolol.

The following undesired events, listed by body system, have been reported. Cardiovascular: bradycardia; heart failure deterioration; postural hypotension which may be associated with syncope; cold extremities. In susceptible patients: precipitation of heart block; Intermittent claudication; Raynaud’s phenomenon.
intravenous infusion of glucagon 1 - 10 mg/hour depending on response, if no response to gluca-
gon occurs or if glucagon is unavailable, a beta-
adrenoceptor stimulant such as dobutamine 2.5 to
10 micrograms/kg/minute by intravenous infusion
may be given. Dobutamine, because of its positive
inotropic effect could also be used to treat hypo-
tension and acute cardiac insufficiency. It is likely
that these doses would be inadequate to reverse
the cardiac effects of beta-blocker blockade if a
large overdose has been taken. The dose of dobu-
tamine should therefore be increased if necessary
to achieve the required response according to the
clinical condition of the patient.
Bronchospasm can usually be reversed by broncho-
dilators.

OVERDOSE
The symptoms of over dosage may include brady-
cardia, Hypotension, acute cardiac insufficiency and
bronchospasm.

General treatment should include: close supervi-
sion, treatment in an intensive care ward, the use
of gastric lavage, activated charcoal and a laxative
to prevent absorption of any drug still present in the
gastrointestinal tract, the use of plasma or plasma
substitutes to treat hypotension and shock. The use
of haemodialysis or haemoperfusion may be consid-
ered.

Excessive bradycardia can be countered with
atropine 1-2 mg intravenously and/or a cardiac
pacemaker. If necessary, this may be followed by
a bolus dose of glucagon 10 mg intravenously. If
required, this may be repeated or followed by an

CNS: confusion; dizziness; headache; mood chan-
ges; nightmares; psychoses and hallucinations;
sleep disturbances or the type noted with other
beta-blockers.

Gastrointestinal: dry mouth, gastrointestinal dis-
turbances, elevations or transaminase levels have
been seen infrequently, rare cases of hepatic toxicity
including intrahepatic cholestasis have been report-
ed, nausea (related to chlorthalidoné), pancreatitis.
Heamatological: leucopenia, purpura, thrombocy-
topenia.

Integumentary: alopecia, dry eyes, psoriasiform skin
reactions, exacerbation of psoriasis, skin rashes.

Neurological: paraesthesia.

Reproductive: impotence

Respiratory: bronchospasm may occur in patients
with bronchial asthma or a history of asthmatic com-
plaints.

Special senses: visual disturbances.

Others: hypersensitivity reactions, including angio-
edema and urticaria; fatigue; an increase in ANA
(Antinuclear Antibodies) has been observed, how-
ever, the clinical relevance of this is not clear.

Discontinuance of the drug should be considered if,
according to clinical judgment, the well-being of the
patient is adversely affected by any of the above
reactions.

STORAGE CONDITIONS
Store between 15-25°C.

PRESENTATIONS
Hypoten 50: Atenolol 50 mg/tablet
Hypoten 100 mg: Atenolol 100 mg/tablet

Excipients: Chlorthalidone, starch, sodium lauryl sul-
phate, povidone, microcrystalline cellulose, sodium
starch glycolate, colloidal silicon dioxide, talc, tita-
nium dioxide, magnesium stearate, hypromellose,
polyethylene glycol, simethicon emulsion.

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