Blokium®

(Atenolol)

Highnoon

COMPOSITION
Blokium 25mg Tablet:
Each film-coated tablet contains: Atenolol 25mg
Blokium 50mg Tablet:
Each film-coated tablet contains: Atenolol 50mg
Blokium 100mg Tablet:
Each film-coated tablet contains: Atenolol 100mg

DESCRIPTION
Blokium (Atenolol) is a synthetic, beta, - selective (cardio selective) adrenoreceptor blocking agent, without membrane stabilizing or intrinsic sympathomimetic (partial agonist) activities.

MECHANISM OF ACTION
Atenolol is a beta-blocker, which is beta1-selective, (i.e. acts preferentially on beta1-adrenergic receptors in the heart). Selectivity decreases with increasing dose. Atenolol is without intrinsic sympathomimetic and membrane-stabilising activitieas and as with other beta-blockers, has negative inotropic effects (and is therefore contraindicated in uncontrolled heart failure).

As with other beta-blockers, the mode of action of atenolol in the treatment of hypertension is unclear. It is probably the action of atenolol in reducing cardiac rate and contractility, which makes it effective in eliminating, or reducing the symptoms of patients with angina.

It is unlikely that any additional ancillary properties possessed by S (-) atenolol, in comparison with the racemic mixture, will give rise to different therapeutic effects.

PHARMACOKINETICS
About 50% of oral dose of atenolol is absorbed. Peak plasma concentration occurs in 2 to 4 hours. Atenolol has low lipid solubility. It crosses the placenta and is distributed into the breast milk where concentrations higher than those in maternal plasma have been achieved. Only small amounts are reported to cross the blood brain barrier and plasma protein binding is minimal. The plasma half life is about 6 hours to 7 hours. Atenolol undergoes little or no hepatic metabolism and is excreted mainly in the urine. It is removed by haemodialysis.

INDICATIONS
Atenolol is indicated in the:
- Management of hypertension
- Management of angina pectoris
- Management of cardiac dysrhythmias
- Management of myocardial infarction. Early intervention in the acute phase and long-term prophylaxis after recovery from myocardial infarction.
- Migraine prophylaxis

DOSAGE AND ADMINISTRATION
Adults
Hypertension
25mg-50mg daily, higher doses are rarely necessary.

A further reduction in blood pressure may be achieved by combining Atenolol tablets with other antihypertensive agents. For example, co-administration of atenolol with a diuretic provides a highly effective and convenient antihypertensive therapy.

Angina
100mg daily in 1-2 divided doses.

Cardiac arrhythmias
2.5mg every 5 minutes if required, to be given at a rate of 1mg/min, treatment course may be repeated every 12 hours if required; maximum 10mg per course. (where available), a suitable oral maintenance dosage is 50-100mg daily, given as a single dose.

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

Blokium is for oral consumption only. It must not be given as intravenous dose.
Migraine Prophylaxis
It is given as 200- 500 mg daily in divided doses

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

Paediatric Population
There is no paediatric experience with Atenolol tablets and for this reason it is not recommended for use in children.

Renal Impairment
Since Atenolol tablets are excreted via the kidneys, the dosage should be adjusted in cases of severe impairment of renal function.

No significant accumulation of atenolol occurs in patients who have a creatinine clearance greater than 35ml/min/1.73 m^2 (normal range is 100-150ml/min/1.73 m^2).

For patients with a creatinine clearance of 15-35 ml/min/1.73 m^2 (equivalent to serum creatinine of 300-600 micromol/litre), the oral dose should be 50mg daily and the intravenous dose should be 10mg once every two days.

For patients with a creatinine clearance of less than 15ml/min/1.73 m^2 (equivalent to serum creatinine of greater than 600 micromol/litre), the oral dose should be 25mg daily or 50mg on alternate days and the intravenous dose should be 10mg once every four days.

Patients on haemodialysis should be given 50mg orally after each dialysis; this should be done under hospital supervision as marked falls in blood pressure can occur.

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

WARNINGS AND PRECAUTIONS
Atenolol, 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 ischaemic heart disease.
- For scheduled surgery and discontinuation of beta-blocker therapy, decision should be made 24 before the procedure after weighing risk and benefit. If treatment is continued, an anaesthetic with little negative inotropic activity should be selected to minimise 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 of 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. Atenolol is a beta1-selective beta-blocker; consequently, its use may be considered although utmost 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 hypoglycaemia, in particular, tachycardia.
- May mask the signs of thyrotoxicosis.
- 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 (epinephrine) 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 atenolol is excreted via the kidneys, dosage should be reduced in patients with a creatinine clearance of below 35 ml/min/1.73 m^2.
- 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, atenolol 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.
- If patient with history of asthma or wheezing requires atenolol, consultation with the doctor is advised.

ADVERSE EFFECTS
The reported adverse event are; purpura, thrombocytopenia, sleep disturbances of the type noted with other beta-blockers, mood changes, nightmares, confusion, psychoses, hallucinations, dizziness, headache, paraesthesia, dry eyes, visual disturbances, cyanosis, bradycardia, heart failure deterioration, precipitation of heart block, cold extremities, postural hypotension which may be associated with syncope, intermittent claudication may be increased if already present, in susceptible patients Raynaud's phenomenon bronchospasm may occur in patients with bronchial asthma or a history of asthmatic complaints, gastrointestinal disturbances, dry mouth, elevations of transaminase levels, hepatic toxicity including intrahepatic cholestasis, hepatic disorder, alopecia, psoriasiform skin reactions, exacerbation of psoriasis, skin rashes, hypersensitivity reactions, including angioedema and urticaria Lupus-like syndrome, impotence, fatigue, acute pancreatitis, and an increase in ANA (Antinuclear Antibodies) has been observed, however the clinical relevance of this is not clear.

DRUG INTERACTIONS
- Combined use of beta-blockers and calcium channel blockers with negative inotropic effects, e.g. verapamil and diltiazem, can lead to an exaggeration of these effects particularly in patients with impaired ventricular function and/or sinoatrial or atrioventricular conduction abnormalities. This may result in severe hypotension, bradycardia and cardiac failure. Neither the beta-blocker nor the calcium channel blocker should be administered intravenously within 48 hours of discontinuing the other.
- Concomitant therapy with dihydropyridines, e.g. nifedipine, may increase the risk of hypotension, and cardiac failure may occur in patients with latent cardiac insufficiency.
- Digitalis glycosides, in association with beta-blockers, may increase atrioventricular conduction time.
- Beta-blockers may exacerbate the rebound hypertension which can follow the withdrawal of clonidine. If the two drugs are co-administered, the beta-blocker should be withdrawn several days before discontinuing clonidine. If replacing clonidine by beta-blocker therapy, the introduction of beta-blockers should be delayed for several days after clonidine administration has stopped. (See also prescribing information for clonidine).
- Class I anti-arrhythmic drugs (e.g. disopyramide) and amiodarone may have a potentiating effect on atrial-conduction time and induce negative inotropic effect.
- Concomitant use of sympathomimetic agents, e.g. adrenaline (epinephrine), may counteract the effect of beta-blockers.
- Concomitant use with insulin and oral antidiabetic drugs may lead to the intensification of the blood sugar lowering effects of these drugs. Symptoms of hypoglycaemia, particularly tachycardia, may be masked.
- Concomitant use of prostaglandin synthetase-inhibiting drugs, e.g. ibuprofen and indomethacin, may decrease the hypotensive effects of beta-blockers.
- Caution must be exercised when using anaesthetic agents with atenolol. The anaesthetist should be informed, and the choice of anaesthetic should be an agent with as little negative inotropic activity as possible. Use of beta-blockers with anaesthetic drugs may result in attenuation of the reflex tachycardia and increase the risk of hypotension. Anaesthetic agents causing myocardial depression are best avoided.

USE IN SPECIFIC POPULATIONS
Pregnancy
Although no evidence of teratogenicity has been found in animal studies, administration of Atenolol during pregnancy should be avoided, unless the benefits outweigh the possible risks.

Atenolol crosses the placental barrier and appears in the cord blood. No studies have been performed on the use of atenolol in the first trimester and the possibility of foetal injury cannot be excluded. Atenolol has been used under close supervision for the treatment of hypertension in the third trimester. Administration of atenolol to pregnant women in the management of mild to moderate hypertension has been associated with intra-uterine growth retardation.

The use of atenolol 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.

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

OVERDOSAGE
The symptoms of overdosage may include bradycardia, hypotension, acute cardiac insufficiency and bronchospasm.

General treatment should include: close supervision; 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 possible uses of haemodialysis or haemoperfusion may be considered.

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 intravenous infusion of glucagon 1-10 mg/hour depending on response. If no response to glucagon 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 hypotension 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 dobutamine 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 bronchodilators.

DOSAGE AND INSTRUCTIONS
To be sold and used on the prescription of a registered medical practitioner only. Keep out of reach of children. Do not store above 30°C. Keep in a dry place. Protect from light.

PRESENTATION
Blokium 25mg Tablets: Alu. PVC. Blister Pack of 3 x 10's.
Blokium 50mg Tablets: Alu. PVC. Blister Pack of 3 x 10's.
Blokium 100mg Tablets: Alu. PVC. Blister Pack of 2 x 10's.

بلوکیم®

(ایٹی نولول)

خوراک و ہدایات:

صرف مستند ڈاکٹر کے نسخہ کے مطابق ہی دوا فروخت اور استعمال کی جائے۔

بچوں کی پہنچ سے دور رکھیں۔ 30°C سے زیادہ درجہ حرارت پر نہ رکھیں۔

خشک جگہ پر رکھیں۔ روشنی سے بچائیں۔

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