SUMMARY OF PRODUCT CHARACTERISTICS

1 NAME OF THE MEDICINAL PRODUCT

CATENOL 50(Atenolol) 50mg Tablets.

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each tablet contains 50mg Atenolol
For full list excipients, see section 6.1

3 PHARMACEUTICAL FORM

Tablet
White, smooth, round, flat-faced, beveled edge, uncoated tablets with "CATENOL 50" debossing on one side & break line on other side.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

Atenolol 50mg tablets are indicated for the management of:

Hypertension
Angina pectoris Cardiac
arrhythmias
Acute myocardial infarction, as early intervention.

4.2 Posology and method of administration

Adults:

Hypertension:

The majority of patients respond to a single oral dose of 100mg daily though some patients respond to 50mg, the effect being established fully after one or two weeks. A further reduction in blood pressure may be obtained by combining atenolol tablets with other antihypertensive therapy such as diuretics.

Angina:

The majority of patients respond to a single oral dose of 100mg daily or to 50mg given twice daily. Increasing the dose above l00mg daily is unlikely to confer additional benefit.

Cardiac arrhythmias.

The initial dose for control of arrhythmias by intravenous application of atenolol is 2.5mg. This dose may be administered in intervals of 5 minutes until the recommended effect is observed or until the maximum dose of 0.15mg per kg of body weight has been reached, respectively. When the arrhythmia has been controlled with intravenous atenolol, the

recommended oral maintenance dose of Atenolol tablets is a single daily dose of 50 - 100mg.

Myocardial infarction:

In those patients who are considered suitable for beta-blocker therapy (presenting for treatment within 12 hours of the onset of chest pain), appropriate intravenous beta-blocker therapy should be supplemented 15 minutes later by a single oral dose of 50mg atenolol tablet providing intravenous therapy has been well tolerated. A further oral dose of 50mg Atenolol tablet should be given 12 hours later followed by l00mg after another 12 hours then l00mg once daily. Atenolol tablets should be stopped immediately on the occurrence of any untoward events.

Method of administration

For oral administration only. Use in Children

Not recommended.

Use in the Elderly

Elderly patients may require a lower dose, especially those with impaired renal function.

Renal Failure

As atenolol tablets are excreted by the kidneys, the dose should be reduced in patients with a creatinine clearance of 35m1/min/l .73m^2 or less. The daily oral dose should be 50mg for patients with a creatinine clearance between 15 and 35ml/min/l .73m^2 and 25mg for patients with a creatinine clearance of less than 15ml/min/l .73m^2, or 50mg on alternate days. Patients on haemodialysis should receive a single oral dose of 50mg after each dialysis. This should be given under supervision in hospital as it may cause a marked fall in blood pressure.

4.3 Contraindications

Atenolol tablets must not be given to patients with a known hypersensitivity to atenolol or any of the excipients. Beta-blocking drugs including atenolol tablets should not be given to patients with bradycardia, cardiogenic shock, hypotension, second or third degree heart block, sick sinus syndrome, uncontrolled heart failure, severe peripheral arterial circulatory disturbances, untreated phaeochromocytoma or metabolic acidosis.

4.4 Special warnings and precautions for use

Like other beta-blockers: atenolol tablets may be used in patients whose heart failure is controlled but should be used with caution in those whose cardiac reserve is poor.

Atenolol tablets may exacerbate Prinzmetal's angina so its use. If considered suitable, must be accompanied by at most caution.

Atenolol tablets may aggravate less severe peripheral atterial circulatory disturbances.

Atenolol tablets have a negative effect on conduction time and caution must be used if given to patients with first degree heart block.

Atenolol 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.

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 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.

May mask the symptoms of hypoglycaemia, and thyrotoxicosis, particular, tachycardia. It slows the heart rate and if symptoms attributable to bradycardia develop the dose should be reduced. It should not be stopped suddenly in patients being treated for ischaemic heart disease.

Should be used with caution in the elderly, starting with a lesser dose (see Section Posology and method of administration).

Since Atenolol is excreted via the kidneys, dosage should be reduced in patients with a creatinine clearance of below 35ml/min/1.7m^2.

When given to patients with a history of anaphylactic reaction to certain allergens, Atenolol tablets may cause a more severe reaction to those allergens in such patients and they may be unresponsive to the usual doses of adrenaline used to treat the allergic reaction.
Though cardioselective, atenolol tablets should not be given to patients with reversible obstructive airways disease, unless there are compelling clinical reasons for its use when it should be used with caution. Airways resistance may occasionally increase in some asthmatic patients but is usually responsive to treatment with normal doses of bronchodilators.

The label and patient information leaflet for this product state the following warning: “If you have ever had asthma or wheezing, you should not take this medicine unless you have discussed these symptoms with the prescribing doctor”.

As with other beta-blockers, in patients with a phaeochromocytoma, an alpha- blocker should be given concomitantly.

Contains Lactose: Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine.

4.5 Interaction with other medicinal products and other forms of interaction

Concomitant use of atenolol with antihypertensive agents as well as with other drugs with

blood pressure lowering potential (e.g. tricyclic antidepressants, barbiturates,phenothiazines) may increase the risk of hypotension.

Combined use with dihydropyridine calcium antagonists, such as nifedipine, may precipitate hypotension and cardiac failure. Enhanced hypotensive effects are observed, when beta blockers given with alpha-blockers, also increased risk of first-dose hypotension with post-synaptic alpha-blockers such as prazosin.

Possible severe postural hypotension when beta-blockers given with moxisylyte.

Prostaglandin synthetase inhibitors, such as ibuprofen or indomethacin, oestrogens and corticosteroids given with Atenolol tablets may reduce its hypotensive effect.

Atenolol tablets may exacerbate the rebound hypertension which may follow clonidine withdrawal so, if given together, atenolol tablets should be stopped several days before clonidine. If used in place of clonidine, atenolol tablets should not be started until several days after stopping clonidine.

Concomitant use of atenolol with sympathicomimetic agents such as adrenaline, dobutamine etc. may counteract its effects.

Concomitant use with Class - I antiarrhythmics may have an additive negative inotropic affect but may also further affect AV conduction.

Class - III antiarrhythmic drugs (e.g. amiodarone): Effect on atrial conduction time may be potentiated.

Combined use with calcium channel blockers with a negative inotropic effect, such as verapamil and diltiazem, may exaggerate this effect especially in patients with impaired ventricular function and sino-atrial or atrio-ventricular conduction abnormalities, leading to bradycardia, severe hypotension and cardiac failure. Neither the beta-blocker nor the calcium antagonist should be given intravenously within 48 hours of stopping the other.

Digitalis glycosides given with Atenolol tablets may increase atrio-ventricular conduction time.

Beta blockers may mask warning signs of hypoglycaemia such as tremor, when used with oral antidiabetics. Beta blockers enhance hypoglycaemic effect of insulin.

Increased peripheral vasoconstriction when beta-blockers given with ergotamine, and methysergide.

The anaesthetist must be informed that the patient is on atenolol tablets if an anaesthetic is to be given and the anaesthetic with least negative inotropic action should be chosen. Care must be used when giving anaesthetics with atenolol tablets as the combination may attenuate the reflex tachycardia and increase the risk of hypotension. Anaesthetics causing myocardial depression should be avoided, if possible.

4.6 Pregnancy and lactation

Pregnancy:
Atenolol crosses the placenta and appears in cord blood. Although its use in the first trimester has not been extensively studied; however, available information indicates that Atenolol taken at the time of conception, and/or during the first trimester of pregnancy is associated with low birth weight babies.

In the third trimester it has been used under close supervision in the treatment of mild to moderate hypertension and has been associated with retardation of intra-uterine growth. The possible benefit of its use in pregnant women or those who may become pregnant should be weighed against possible risks, especially in the first and second trimesters.

Lactation:
Atenolol accumulates to a significant extent in breast milk so it should only be used with caution in women who are breast feeding.

4.7 Effects on ability to drive and use machines

Atenolol tablets are unlikely to impair patients ability to drive or operate machinery unless fatigue or dizziness occur, about which the patient should be warned.

4.8 Undesirable effects

Atenolol tablets are well tolerated and the adverse effects experienced are usually a result of its pharmacological action.
The following undesired events, listed by body system, have been reported with the following frequencies: very common (10%), common (1–9.9%), uncommon (0.1– 0.9%), rare (0.01–0.09%), very rare (<0.01%) including isolated reports, not known (cannot be estimated from the available data).

Cardiac disorders:

Common: Bradycardia.
Rare: Heart failure deterioration, precipitation of heart block.

Vascular disorders:

Common: Cold extremities.
Rare: Postural hypotension which may be associated with syncope, intermittent claudication may be increased if already present, in susceptible patients Raynaud's phenomenon.

Blood and lymphatic system disorders: Rare: Purpura, thrombocytopenia.

Psychiatric disorders:

Common: Depression

Uncommon: Sleep disturbances of the type noted with other beta-blockers. Rare: Mood changes, nightmares, confusion, psychoses and hallucinations.

Nervous system disorders:

Rare: Dizziness, headache, paraesthesia.

Eye disorders:

Rare: Dry eyes, visual disturbances.

Respiratory, thoracic and mediastinal disorders:

Rare: Bronchospasm may occur in patients with bronchial asthma or a history of asthmatic complaints.

Gastrointestinal disorders:

Common: Gastrointestinal disturbances. Rare: Dry mouth.

Hepato-biliary disorders:

Uncommon: Elevations of transaminase levels.
Rare: Hepatic toxicity including intrahepatic cholestasis.

Skin and subcutaneous tissue disorders:

Rare: Alopecia, psoriasiform skin reactions, exacerbation of psoriasis, skin rashes. Others: Hypersensitivity reactions, including angioedema and urticaria have been reported.

Reproductive system and breast disorders:

Rare: Impotence.

General disorders and administration site conditions:

Common: Fatigue.

Investigations:

Very rare: An increase in ANA (Antinuclear Antibodies) has been observed, however the clinical relevance of this is not clear.

Atenolol tablets should be stopped if on clinical grounds the benefit of such treatment for the patient is outweighed by adverse effects.

4.9 Overdose

Overdosage may be indicated by bradycardia, hypotension, acute heart failure and bronchospasm. Treatment should be supportive, carried out in an intensive care unit, and include gastric lavage, activated charcoal and a laxative to reduce absorption of any drug remaining in the gut and to encourage sink conditions for back diffusion. Hypotension and shock may require treatment with plasma or plasma substitutes. Haemoperfusion and haemodialysis should be considered.

Bronchospasm is usually reversed by giving bronchodilators. Bradycardia may be treated with 1 - 2mg intravenous atropine or a pacemaker and followed, if necessary, by an intravenous bolus of 10mg glucagon repeated as required or followed by an intravenous infusion of glucagon 1 - 10mg/hr depending on the response. If there is no response to glucagon or if it is unavailable, a beta stimulant should be given by intravenous infusion, such as dobutamine 2.5 to l0 µg/kg/minute. Dobutamine may also be used to treat hypotension and acute heart failure because of its positive inotropic effect. If a large overdose has been taken, it is unlikely that these doses of dobutamine would be sufficient to reverse the cardiac effects of beta-blockade and they should be increased according to the response of the patient in order to achieve the desired clinical condition.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Atenolol is a hydrophilic beta$_1$-selective adrenoreceptor blocking drug, that is, it acts preferentially on beta$_1$ -adrenoreceptors in the heart, but selectivity decreases with increasing dose. It does not have intrinsic sympathomimetic activity or membrane stabilising activity. Like other beta-adrenoceptor blocking drugs, its antihypertensive mode of action is unclear and it is negatively inotropic and so is contra-indicated in uncontrolled heart failure. Its reduction of heart rate and myocardial contractility is probably responsible for its anti-anginal activity. It is unlikely that the S- form has any therapeutic effects not possessed by the racemic mixture.

It is effective and well tolerated by most races but may be less effective in black patients. It is compatible with diuretics, other antihypertensive agents and anti-anginal agents (see Warnings and Interactions).

Infarct size, morbidity, mortality, the number of patients progressing to frank infarction and the incidence of ventricular arrhythmias are all reduced by early treatment with Atenolol Tablets after acute myocardial infarction. The reduction in pain may reduce the need for opiate analgesia. Atenolol tablets are an additional treatment to standard coronary care.

5.2 Pharmacokinetic properties

When given by mouth, absorption of atenolol is consistent but incomplete with only about 40-50% being absorbed. Hepatic metabolism is insignificant and more than 90% reaches the systemic circulation. Plasma concentrations peak 24 hours after dosing, are consistent and

subject to little variation. The plasma elimination half life is about 6 hours but this is increased in severe renal failure as the kidney is the main route of elimination. Plasma protein binding is about 3%.

Atenolol penetrates tissues poorly and brain tissue levels are low due to its low lipid solubility.

5.3 Preclinical safety data

Oral atenolol is well tolerated in animals. Oral daily doses of 5 mg/kg in rats and 15 mg/kg in dogs were tolerated in long term toxicity studies without evidence of significant changes. Doses of 200 mg/kg in rats and 300 mg/kg in dogs were associated with an increase in heart and spleen weight.
In animal tests atenolol has shown no mutagenic, carcinogenic or teratogenic potential and does not impair fertility.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Starch
Calcium Hydrogen Phosphate Dihydrate
Colloidal silicon dioxide
Magnesium stearate
Sodium starch glycolate
Sodium lauryl sulphate

6.2 Incompatibilities

Not applicable

6.3 Shelf life

3 years

6.4 Special precautions for storage

STORE BELOW 30ºC. PROTECT FROM LIGHT.

6.5 Nature and contents of container

Blister Pack of 10’s

6.6 Special precautions for disposal

Not applicable

7 MARKETING AUTHORISATION HOLDER

Name : Zydus Lifesciences Limited
Address : Zydus Corporate Park, Scheme No. 63, Survey No. 536
Khoraj(Gandhinagar),Nr. Vaishnodevi Circle, Ahmedabad
Gandhinagar, Gujrat 382481 India
Tel. No. : +91-079-71800000, +91-079-48040000

8. MARKETING AUTHORISATION NUMBER(S)
07314/08207/REN/2021

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Date of first authorisation : 27/11/2006
Date of latest renewal : 13/04/2022

10. DATE OF REVISION OF THE TEXT
November 2023

11. REFERENCE
Not Applicable