Betaserc® 16 mg

16mg betahistine dihydrochloride

Abbott

Read this entire leaflet carefully before you start taking this medicine.
Keep this leaflet. You may need to read it again. If you have questions not answered by this pamphlet, please ask your doctor or pharmacist. This medicine has been prescribed to you personally and you should not pass it on to others. It may harm them, even if their symptoms are the same as yours.

Betaserc 16 mg is a round, biconvex, scored, white tablet with beveled edges. On the one side, the tablet is scored and the number 267 is engraved on either side of the score line.This tablet is for oral administration (to be taken by mouth) and contains 16 mg of betahistine dihydrochloride. The tablet can be divided into equal halves.
Excipients (non-medicinal ingredients): Microcrystalline cellulose, mannitol (E421), citric acid monohydrate, colloidal anhydrous silica and talc.

Indications
Ménière's Syndrome as defined by the following core symptoms:
• vertigo (with nausea/vomiting)
• hearing loss (hardness of hearing)
• tinnitus (ringing in the ears)
Symptomatic treatment of vestibular vertigo.

Dosage and administration
Always take Betaserc exactly as your doctor has prescribed.
If you have any questions, contact your doctor or pharmacist.If you forget to take your tablet(s), do not take a double dose to compensate for it. If you require further information, please ask your doctor or pharmacist for advice.

The dosage for adults is 24–48 mg divided over the day.

16 mg tablets
½ – 1 tablet 3 times daily

Your doctor will adjust the dosage according to your response to the medication. Improvement of symptoms may take up to two weeks and the best results are sometimes obtained only after a few months. There are indications that treatment from the onset of the disease prevents its progression and/or the loss of hearing in later phases of the disease.
Pediatric population:
Betaserc is not recommended for use in children under the age of 18 years due to insuffi cient data on safety and efficacy.

Geriatric population:
No dose adjustment is required in elderly.

Renal impairment:
No dose adjustment is required in renal impaired patients.

Hepatic impairment:
No dose adjustment is required in hepatic impaired patients.

Contraindications
Do not take Betaserc if you are hypersensitive (allergic) to the active substance or to any of the excipients.

Warnings and special precautions for use
If you suffer from a phaeochromocytoma (an adrenal gland tumor) or bronchial asthma, your doctor will need to monitor you carefully while you are taking this medication. Furthermore, please inform your doctor or pharmacist if you have a history of peptic (stomach) ulcer before taking this medication.

Interactions with other medications
Please tell your doctor or pharmacist if you are taking or have recently taken any other medicines including medicines obtained without a prescription.

No *in vivo* interaction studies have been performed. Based on *in vitro* data, no *in vivo* inhibition on Cytochrome P450 enzymes is expected.

In vitro data indicate an inhibition of betahistine metabolism by drugs that inhibit monoamino-oxidase (MAO) including MAO subtype B (e.g. selegiline). Caution is recommended when using betahistine and MAO inhibitors (including MAO-B selective) concomitantly.

Pregnancy and lactation
Ask your doctor or pharmacist for advice before taking any medicine during pregnancy.

Pregnancy:
There is insufficient data on the use of betahistine in pregnant women. Animal studies are insuffi cient with respect to effects on pregnancy, embryonal/foetal development, parturition (giving birth) and postnatal development. The potential risk for humans in this regard is unknown. Betahistine should not be used during pregnancy unless is it deemed absolutely necessary by your doctor.

Lactation:
It is not known whether betahistine is excreted in human milk. There are no animal studies on the excretion of betahistine in milk. You should not take Betahistine if you are nursing. For further information, talk to your doctor regarding the importance of this medicine to you, the benefits of nursing and the potential risks to your child.

Effects on ability to drive and use machines
Betahistine is indicated for Morbus Meniere and Vertigo. Both diseases can negatively affect the ability to drive and use machines.

In clinical studies specifically designed to investigate the ability to drive and use machines betahistine had no or negligible effects.

UNDESIRABLE EFFECTS
Like all medicines, Betaserc may have side effects. If you notice any side effects not mentioned in this leaflet, or if any of the side effects get serious, please inform your doctor or pharmacist.

The following undesirable effects have been experienced with the below indicated frequencies in betahistine-treated patients in placebo-controlled clinical trials: very common (≥1/10); common (≥1/100 to <1/10); uncommon (≥1/1,000 to <1/100); rare (≥1/10,000 to <1/1,000); very rare (<1/10,000).

Gastrointestinal disorders
Common: nausea and dyspepsia (indigestion)

Nervous System Disorders
Common: headache

In addition to those events reported during clinical trials, the following undersirable effects have been reported spontaneously during post-marketing use and in scientific literature. A frequency cannot be estimated from the available data and is therefore classified as "not known"

Immune System disorders
Hypersensitivity (allergic) reactions (such as anaphylaxis) have been reported.

Gastrointestinal disorders

Mild gastric complaints (e.g. vomiting, gastrointestinal pain, abdominal distension and bloating) have been observed.
These can normally be dealt with by taking the dose during meals or by lowering the dose.

Skin and subcutaneous tissue disorders
Cutaneous (skin) and sub cutaneous (tissues under the skin) hypersensitivity (allergic) reactions have been reported, in particular angioneurotic oedema (sudden onset of face, neck or limb swelling), urticaria (hives), rash and pruritus (itchiness).

Overdose
Symptoms of overdose
A few overdose cases have been reported. Some patients experienced mild to moderate symptoms such as nausea, somnolence (sleepiness) and abdominal pain with doses up to 640 mg. More serious complications including convulsions, and pulmonary (lung) and cardiac (heart) complications were observed in cases of intentional overdose of Betaserc, especially when taken in combination with other overdosed drugs.

Treatment of overdose
No specific antidote is known. Treatment of overdose should include standard supportive measures.

Pharmacodynamics
Pharmacotherapeutic group: Anti-vertigo preparations.
The following is a detailed description of how the active ingredients of Betaserc work. For further explanations please consult your doctor.

The mechanism of action of betahistine is only partly understood. There are several plausible hypotheses that are supported by animal studies and human data:

• Betahistine affects the histaminergic system:
Betahistine acts both as a partial histamine H1-receptor agonist and histamine H3-receptor antagonist also in neuronal tissue, and has negligible H2-receptor activity.

Betahistine increases histamine turnover and release by blocking presynaptic H3-receptors and inducing H3-receptor downregulation.

• Betahistine may increase blood flow to the cochlear region as well as to the whole brain:

Pharmacological testing in animals has shown that the blood circulation in the striae vascularis of the inner ear improves, probably by means of a relaxation of the precapillary sphincters of the microcirculation of the inner ear.

Betahistine was also shown to increase cerebral blood flow in humans.

• Betahistine facilitates vestibular compensation:
Betahistine accelerates the vestibular recovery after unilateral neurectomy in animals, by promoting and facilitating central vestibular compensation; this effect, characterized by an up-regulation of histamine turnover and release, is mediated through H3 Receptor antagonism. In human subjects, recovery time after vestibular neurectomy was also reduced when treated with betahistine.

• Betahistine alters neuronal firing in the vestibular nuclei:
Betahistine was also found to have a dose dependent inhibiting effect on spike generation of neurons in lateral and medial vestibular nuclei.

The pharmacodynamic properties as demonstrated in animals may contribute to the therapeutic benefit of betahistine in the vestibular system.

The efficacy of betahistine was shown in studies in patients with vestibular vertigo and with Ménière's disease as was demonstrated by improvements in severity and frequency of vertigo attacks.

Pharmacokinetics
The following is a detailed description of how the active ingredients of Betaserc are metabolized by the body. For further explanations please consult your doctor.

Absorption:
Orally administered betahistine is readily and almost completely absorbed from all parts of the gastrointestinal tract. After absorption, the drug is rapidly and almost completely metabolized into 2-pyridylacetic acid. Plasma levels of betahistine are very low Pharmacokinetic analyses are therefore based on 2-PAA measurements in plasma and urine.

Under fed conditions Cmax is lower compared to fasted conditions. However, total absorption of betahistine is similar under both conditions,indicating that food intake only slows down the absorption of betahistine.

Distribution:
The percentage of betahistine that is bound by blood plasma proteins is less than 5 %.

Biotransformation:
After absorption, betahistine is rapidly and almost completely metabolized into 2-PAA (which has no pharmacological activity). After oral administration of betahistine the plasma (and urinary) concentration of 2-PAA reaches its maximum 1 hour after intake and declines with a half-life of about 3.5 hours.

Excretion:
2-PAA is readily excreted in the urine. In the dose range of 8 to 48 mg, about 85% of the original dose is excreted in the urine. Renal or fecal excretion of betahistine itself is of minor importance.

Linearity:
Recovery rates are constant over the oral dose range of 8 – 48 mg indicating that the pharmacokinetics of betahistine are linear, and suggesting that the involved metabolic pathway is not saturated.

Incompatibilities
Not applicable

Shelf life and storage conditions
3 years, do not store above 30°C.

Store in the original package in order to protect from light.
Do not use the medicine after the expiry date stated on carton.
Keep this medicine out of the reach and sight of children.

Pack sizes
Betaserc 16mg tablets are supplied in packages containing 10, 14,15, 20, 28, 30, 40, 50, 56, 60, 100, 200, 300, 400 or 500 tablets per pack (not all pack sizes may be marketed).

The blisters (bubble packs) are made of PVC/PVDC and aluminum lidding foil.

Further information
Any unused product or waste material should be disposed of in accordance with local requirements.
The information in this leafl et is limited. For further information, please contact your doctor or pharmacist.

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Manufactured by
Abbott Healthcare SAS
01400 Châtillon-sur-Chalaronne – FRANCE
for
Abbott Healthcare Products B.V., THE NETHERLANDS