

BOMITIS®

Keep out of reach of children.
Read insert paper carefully before use.
This drug is only used under physician's prescription.

COMPOSITION

Each soft capsule contains:
Active ingredient: Isotretinoin 20 mg

Inactive ingredients:

Corn oil, lecithin oil, palm oil, white beeswax, gelatin, concentrated glycerin, D-sorbitol 70%, ethyl vanillin, red ferric oxide, black ferric oxide, yellow ferric oxide, titanium dioxide, purified water.

PHARMACEUTICAL FORM

Yellow substance in oval soft capsule with one side of cap. brown and other side is white.

INDICATIONS

Isotretinoin is used for the treatment of severe forms of acne (such as nodular or conglobate acne or isotretinoin resistant acne), resistant to adequate courses of standard therapy with systemic antibiotics and topical therapy.

DOSAGE AND ADMINISTRATION

Isotretinoin should only be prescribed by or under the supervision of physicians with expertise in the use of systemic retinoids for the treatment of severe acne and a full understanding of the risks of isotretinoin and some of the adverse effects. As further improvement of the acne can be observed up to 8 weeks after discontinuation of treatment, a further course of treatment should not be considered until at least this period has elapsed.

Patients with severe renal insufficiency

In patients with severe renal insufficiency treatment should be started at a lower dose (e.g. 10 mg/day). The dose should then be increased up to 1 mg/kg/day or until the patient is receiving the maximum tolerated dose.

Children

Isotretinoin is not indicated for the treatment of prepubertal acne and is not recommended in patients less than 12 years of age.

Patients with intolerance

In patients who show severe intolerance to the recommended dose, treatment may be continued at a lower dose with the consequences of a longer therapy duration and a higher risk of relapse. In order to achieve the maximum possible efficacy in these patients the dose should normally be continued at the highest tolerated dose.

CONTRAINDICATIONS

Isotretinoin is contraindicated in women who are pregnant or breastfeeding. Isotretinoin is contraindicated in children and of childbearing potential. Isotretinoin is also contraindicated in patients with hypersensitivity to isotretinoin or to any component of the drug.

Isotretinoin is also contraindicated in patients:

- With hepatic impairment.
- With excessively elevated blood lipid values.
- With hypervitaminosis A.
- Receiving concomitant treatment with tetracyclines.

WARNINGS AND PRECAUTIONS FOR USE

Pregnancy
Teratogenicity of isotretinoin is very high. Therefore, isotretinoin must not be used by females who are pregnant or who may become pregnant. If a woman is taking isotretinoin and becomes pregnant, there is an extremely high risk that a deformed infant can result if pregnancy occurs while taking isotretinoin in any amount even for short periods of time. The pregnancy tests should be made to ensure the patient is not pregnant when she starts treatment with isotretinoin.

Contraception should be continued for at least 1 month after stopping treatment with isotretinoin, even in patients with amenorrhoea. Five weeks after stopping treatment, women should undergo a final pregnancy test to exclude pregnancy. Patients should not donate blood during therapy and for 1 month following discontinuation of isotretinoin because of the potential risk to the fetus of a pregnant transfusion recipient.

This drug should be prescribed by prescribers who have special competence in the diagnosis and treatment of severe recalcitrant nodular acne as experienced in the use of systemic retinoids, and understand the risk of teratogenicity if these drugs is used during pregnancy.

Psychiatric disorders

Depression, depression aggravated, anxiety, aggressive tendencies, mood alterations, psychotic symptoms, and very rarely, suicidal ideation, suicide attempts and suicide have been reported in patients treated with isotretinoin. Particular care needs to be taken in patients with a history of depression and all patients should be monitored for signs of depression and referred for appropriate treatment if necessary.

Skin and subcutaneous tissues disorders

Acute exacerbation of acne is occasionally seen during the initial period but this subsides with continued treatment, usually within 7-10 days, and usually does not require dose adjustment. Exposure to intense sunlight or to UV rays should be avoided. Where necessary a sun-protection product with a high protection factor of at least SPF 15 should be used.

Aggressive chemical and cutaneous laser treatment should be avoided in patients on isotretinoin for a period of 5-6 months after the end of the treatment because of the risk of hypertrophic scarring. Wax depilation should be avoided in patients on isotretinoin for at least a period of 6 months after treatment because of the risk of epidermal stripping.

Concomitant administration with topical keratolytic or exfoliative anti-acne agents should be avoided as local irritation may increase. Patients should be advised to use a skin moisturising ointment or cream and a lip balm from the start of treatment as isotretinoin is likely to cause dryness of the skin and lips.

There have been post-marketing reports of severe skin reactions (e.g. erythema multiforme (EM), Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN)) associated with isotretinoin use. If a severe skin reaction is suspected, isotretinoin treatment should be discontinued.

Eye disorders

Dry eyes, corneal opacities, decreased night vision and keratitis usually resolve after discontinuation of therapy. Dry eyes can be helped by the application of a lubricating eye ointment or by the application of tear replacement therapy. Intolerance to contact lenses may occur which may necessitate the patient to wear glasses during treatment.

Decreased night vision has also been reported and the onset in some patients was sudden. Withdrawal of isotretinoin may be necessary. Musculo-skeletal and connective tissue disorders

Myalgia, arthralgia and increased serum creatine phosphokinase values have been reported in patients receiving isotretinoin, particularly in those undertaking vigorous physical activity. Bone changes including premature epiphyseal closure, hyperostosis, and calcification of tendons and ligaments have occurred after several years of administration at very high doses for treating disorders of keratinisation. The dose levels, duration of treatment and total cumulative dose in these patients generally far exceeded those recommended for the treatment of acne.

Benign intracranial hypertension

Cases of benign intracranial hypertension have been reported, some of which involved concomitant use of tetracyclines. Signs and symptoms of benign intracranial hypertension include headache, nausea and vomiting, visual disturbances and papilloedema. Patients who develop benign intracranial hypertension should discontinue isotretinoin immediately.

Hepatobiliary disorders

Liver enzymes should be checked before treatment, 1 month after the start of treatment, and subsequently at 3 monthly intervals unless more frequent monitoring is clinically indicated. Transient and reversible increases in liver transaminases have been reported. In many cases these changes have been within the normal range and values have returned to baseline levels during treatment. However, in the event of persistent clinically relevant elevation of transaminase levels, reduction of the dose or discontinuation of treatment should be considered.

Renal insufficiency

Renal insufficiency and renal failure do not affect the pharmacokinetics of isotretinoin. Therefore, isotretinoin can be given to patients with renal insufficiency. However, it is recommended that patients are started on a low dose and titrated up to the maximum tolerated dose.

Lipid metabolism

Serum lipids (fasting values) should be checked before treatment, 1 month after the start of treatment, and subsequently at 3 monthly intervals unless more frequent monitoring is clinically indicated. Elevated serum lipid values usually return to normal on reduction of the dose or discontinuation of treatment and may also respond to dietary measures.

Isotretinoin has been associated with an increase in plasma triglyceride levels. Isotretinoin should be discontinued if hypertriglyceridaemia cannot be controlled at an acceptable level or if symptoms of pancreatitis occur. Levels in excess of 800 mg/dL or 9 mmol/L are sometimes associated with acute pancreatitis, which may be fatal.

Gastrointestinal disorders

Isotretinoin has been associated with inflammatory bowel disease (including regional ileitis) in patients without any history of intestinal disorders. Patients experiencing severe (haemorrhagic) diarrhoea should discontinue isotretinoin immediately.

Allergic reactions

Anaphylactic reactions have been rarely reported, in some cases after previous topical exposure to retinoids. Allergic cutaneous reactions are reported infrequently. Serious cases of allergic vasculitis, often with purpura (bruises and red patches) of the extremities and extracutaneous involvement have been reported. Severe allergic reactions necessitate interruption of therapy and careful monitoring.

Fructose intolerance

The drug contains sorbitol. Patients with rare hereditary problems of fructose intolerance should not take this medicine.

High risk patients

In patients with diabetes, obesity, alcoholism or a lipid metabolism disorder undergoing treatment with isotretinoin, more frequent checks of serum values for lipids and/or blood glucose may be necessary. Elevated fasting blood sugars have been reported, and new cases of diabetes have been diagnosed during isotretinoin therapy.

PREGNANCY AND LACTATION

Use in pregnancy:
Pregnancy is an absolute contraindication to treatment with isotretinoin. Women of childbearing potential have to use effective contraception during and up to one month after treatment. If pregnancy does occur in spite of these precautions during treatment with isotretinoin or in the month following, there is a great risk of very severe and serious malformation of the foetus.

If pregnancy occurs in a woman treated with isotretinoin, treatment must be stopped and the patient should be referred to a physician specialised or experienced in teratology for evaluation and advice.

Use in lactation:
Isotretinoin is highly lipophilic, therefore the passage of isotretinoin into human milk is very likely. Due to the potential for adverse effects in the child exposed via mother's milk, isotretinoin is contraindicated during breast-feeding.

Fertility:
Isotretinoin, in therapeutic dosages, does not affect the number, motility and morphology of sperm and does not jeopardise the formation and development of the embryo on the part of the men taking isotretinoin.

EFFECTS ON ABILITY TO DRIVE AND USE MACHINES
A number of cases of decreased night vision have occurred during isotretinoin therapy and in rare instances have persisted after therapy. Because the onset in some patients was sudden, patients should be advised of this potential problem and warned to be cautious when driving or operating machines. Drowsiness, dizziness and visual disturbances have been reported very rarely. However, patients should be cautious when driving or operating machinery.

DRUG INTERACTIONS, INCOMPATIBILITIES
Patients should not take vitamin A as concurrent medication due to the risk of developing hypervitaminosis A. Cases of benign intracranial hypertension (pseudotumor cerebri) have been reported with concomitant use of isotretinoin and tetracyclines. Therefore, concomitant treatment with tetracyclines must be avoided.

Concurrent administration of isotretinoin with topical keratolytic or exfoliative anti-acne agents should be avoided as local irritation may increase.

UNDESIRABLE EFFECTS
The following symptoms are the most commonly reported undesirable effects with isotretinoin: dryness of the skin, dryness of the mucosae e.g. of the lips (cheilitis), the nasal mucosa (epistaxis) and the eyes (conjunctivitis). Some of the side effects associated with the use of isotretinoin are dose-related. The side effects are generally reversible after altering the dose or discontinuation of treatment, whereas others persist after treatment has stopped.

Very common (≥1/10)
Blood and lymphatic system disorders: Anaemia, red blood cell sedimentation rate increased, thrombocytopenia, thrombocytosis.

Eye disorders: Blepharitis, conjunctivitis, dry eye, eye irritation. Hepatobiliary disorders: Transaminase increased.

Skin and subcutaneous tissues disorders: Cheilitis, dermatitis, dry skin, localised exfoliation, pruritus, rash erythematous, skin fragility (pruritic, contact, traumatic). Musculo-skeletal and connective tissue disorders: Arthralgia, myalgia, back pain (particularly in children and adolescent patients).

Investigations: Blood triglycerides increased, high density lipoprotein decreased. Common (≥1/100, <1/1000)

Blood and lymphatic system disorders: Neutropenia. Nervous system disorders: Headache. Respiratory, thoracic and mediastinal disorders: Epistaxis, nasal dryness, nasopharyngitis.

Investigations: Blood cholesterol increased, blood glucose increased, haematuria, proteinuria. Rare (≥1/10000, <1/10000)

Immune system disorders: Allergic skin reaction, anaphylactic reactions, hypersensitivity. Psychiatric disorders: Depression, depression aggravated, aggressive tendencies, anxiety, mood alterations.

Skin and subcutaneous tissues disorders: Alopecia. Very Rare (≤1/10000)

Infections: Gram positive (mucocutaneous) bacterial infection. Blood and lymphatic system disorders: Lymphadenopathy. Metabolism and nutrition disorders: Diabetes mellitus, hyperuricaemia.

Psychiatric disorders: Abnormal behaviour, psychotic disorder, suicidal ideation, suicide attempt, suicide. Nervous system disorders: Benign intracranial hypertension, convulsions, drowsiness, dizziness.

Eye disorders: Blurred vision, cataract, colour blindness (colour vision deficiencies), contact lens intolerance, corneal opacity, dry eye, keratitis, keratitis, papilloedema (as sign of benign intracranial hypertension), photophobia, visual disturbances.

Ear and labyrinth disorders: Hearing impaired. Vascular disorders: Vasculitis (for example Wegener's granulomatosis, allergic vasculitis).

Respiratory, thoracic and mediastinal disorders: Bronchospasm (particularly in patients with asthma), hoarseness. Gastrointestinal disorders: Colitis, ileitis, dry throat, gastrointestinal haemorrhage, haemorrhagic diarrhoea and inflammatory bowel disease, nausea, pancreatitis.

Hepatobiliary disorders: Hepatitis. Skin and subcutaneous tissues disorders: Acne fulminans, acne aggravated (acne flare), erythema (facial), exanthema, hair disorders, hirsutism, nail dystrophy, paronychia, photosensitivity reaction, pustular, granuloma, skin pigmentation, sweating increased.

Musculo-skeletal and connective tissue disorders: Arthritis, calcinosis (calcification of ligaments and tendons), epiphysis premature fusion, exostosis, (hyperostosis), reduced bone density, tendonitis, rhabdomyolysis. Renal and urinary disorders: Glomerulonephritis.

General disorders and administration site conditions: Granulation tissue (increased formation of), malaise. Investigations: Blood creatine phosphokinase increased.

Frequency unknown (frequency cannot be estimated from available data)
Skin and subcutaneous tissues disorders: Erythema multiforme, Stevens-Johnson Syndrome, toxic epidermal necrolysis.

OVERDOSEAGE AND MANAGEMENT
Isotretinoin is a derivative of vitamin A. Although the acute toxicity of isotretinoin is low, signs of hypervitaminosis A could appear in cases of accidental overdose. Manifestations of acute vitamin A toxicity include severe headache, nausea or vomiting, drowsiness, irritability and pruritus. Signs and symptoms of accidental or deliberate overdose with isotretinoin would probably be similar. These symptoms would be expected to be reversible and to subside without the need for treatment.

Any exposure to isotretinoin, whether as an overdose or a normal dose, can be dangerous in pregnant women as this medication can cause serious birth defects or miscarriages. If a woman of childbearing potential overdoses on isotretinoin, it is essential that she does not get pregnant for one month after the overdose (two forms of effective birth control must be used). If a man takes an isotretinoin overdose, he must use a condom or avoid sex with women who are pregnant or may become pregnant for one month, as an overdose can cause high levels of isotretinoin in the semen. In addition, all patients with isotretinoin overdose should not donate blood for at least 30 days.

PHARMACODYNAMIC PROPERTIES
Pharmacotherapeutic group: Anti-acne preparations for systemic use. **ATC code:** D10BA01

Mechanism of action
Isotretinoin is a stereoisomer of all-trans retinoic acid (tretinoin). The exact mechanism of action of isotretinoin on the eye has not been elucidated in detail, but it has been established that the improvement observed in the clinical picture of severe acne is associated with suppression of sebaceous gland activity and a histologically demonstrated reduction in the size of the sebaceous glands. Furthermore, a dermal anti-inflammatory effect of isotretinoin has been established.

Efficiency
Hypercornification of the epithelial lining of the pilosebaceous unit leads to shedding of corneocytes into the duct and blockage by keratin and excess sebum. This is followed by formation of a comedone and eventually inflammatory lesions. Isotretinoin inhibits proliferation of sebocytes and appears to act in acne by re-setting the orderly program of differentiation. Sebum is a major substrate for the growth of Propionibacterium acnes so that reduced sebum production inhibits bacterial colonisation of the duct.

PHARMACOKINETIC PROPERTIES
Absorption
The absorption of isotretinoin from the gastro-intestinal tract is variable and dose-linear over the therapeutic range. The absolute bioavailability of isotretinoin has not been determined, since the compound is not available as an intravenous preparation for human use, but extrapolation from dog studies would indicate a low and variable systemic bioavailability. When isotretinoin is taken with food, the bioavailability is doubled relative to fasting conditions.

Distribution
Isotretinoin is extensively bound to plasma proteins, mainly albumin (99.9 %). The volume of distribution of isotretinoin in man has not been determined since isotretinoin is not available as an intravenous preparation for human use. In humans little information is available on the distribution of isotretinoin into tissue. Concentrations of isotretinoin in the epidermis are only half of those in serum.

Plasma concentrations of isotretinoin are about 1.7 times those of whole blood due to poor penetration of isotretinoin into red blood cells.

Metabolism
After oral administration of isotretinoin, three major metabolites have been identified in plasma: 4-oxo-isotretinoin, tretinoin (all-trans retinoic acid), and 4-oxo-tretinoin. These metabolites have shown biological activity in several *in vitro* tests. 4-oxo-isotretinoin has been shown in a clinical study to be a significant contributor to the activity of isotretinoin (reduction in sebum excretion rate despite no effect on plasma levels of isotretinoin and tretinoin). Other minor metabolites includes glucuronid conjugates. The major metabolite is 4-oxo-isotretinoin with plasma concentrations at steady state, that are 2.5 times higher than those of the parent compound.

Isotretinoin and tretinoin (all-trans retinoic acid) are reversibly metabolised (interconverted), and the metabolism of tretinoin is therefore linked with that of isotretinoin. It has been estimated that 20-30 % of isotretinoin is metabolised by isomerisation.

Enterohepatic circulation may play a significant role in the pharmacokinetics of isotretinoin in man. *In vitro* metabolic studies have demonstrated that several CYP enzymes are involved in the metabolism of isotretinoin to 4-oxo-isotretinoin and tretinoin. No single isozyme appears to have a predominant role. Isotretinoin and its metabolites do not significantly affect CYP activity.

Elimination
After oral administration of radiolabelled isotretinoin approximately equal fractions of the dose were excreted in urine in the following oral administration of isotretinoin, the terminal elimination half-life of unchanged drug in patients with acne a mean value of 19 hours. The terminal elimination half-life of 4-oxo-isotretinoin is longer, with a mean value of 29 hours.

Isotretinoin is a physiological retinoid and endogenous retinoid concentrations are reached within approximately two weeks following the end of isotretinoin therapy.

Special populations
Since isotretinoin is contraindicated in patients with hepatic impairment, limited information on the kinetics of isotretinoin is available in this patient population. Renal failure does not significantly reduce the plasma clearance of isotretinoin or 4-oxo-isotretinoin.

PACKAGING
Box of 3 blisters x 10 soft capsules.

STORAGE, SHELF-LIFE, SPECIFICATION
Storage: In hermetic container, dry and cool place, below 30°C, protect from light. Shelf-life: 36 months from the manufacturing date.

Specifics: Home standard. **NAME, ADDRESS OF MANUFACTURER**
PHIL INTER PHARMA CO., LTD
No.20, Huu Nghi Bld., Vietnam-Singapore Industrial Park, Thuan An, Binh Duong.