

۵x۱ گولیاں  
۱۰x۱ گولیاں  
۵x۲ گولیاں

۱۰۰ ملی گرام، ۲۰۰ ملی گرام اور ۴۰۰ ملی گرام

# لیپیدن®

اٹورویسٹاٹن کیلشیم

اینٹی ہائپر لیپڈیمک

خوراک:

لیپیدن کی عمومی ابتدائی خوراک ۱۰۰ ملی گرام سے ۸۰۰ ملی گرام روزانہ ہے جو کہ دن میں کسی بھی وقت کھانے کے ساتھ یا کھانے کے بغیر لی جا سکتی ہے۔

ہدایات:

- < دوا کو ٹھنڈی اور خشک جگہ پر رکھیں۔
- < دوا کو گرمی، روشنی اور نمی سے محفوظ رکھیں۔
- < دوا صرف ڈاکٹری نسخے کے مطابق استعمال کریں۔
- < تمام دوائیں بچوں کی پہنچ سے دور رکھیں۔

پیشکش:

- لیپیدن ۱۰۰ ملی گرام گولیاں (۱۰x۱) ایلو۔ ایلو پیک میں دستیاب ہیں۔
- لیپیدن ۲۰۰ ملی گرام گولیاں (۵x۱) ایلو۔ ایلو پیک میں دستیاب ہیں۔
- لیپیدن ۴۰۰ ملی گرام گولیاں (۵x۲) ایلو۔ ایلو پیک میں دستیاب ہیں۔



Manufactured by :

**The Schazoo Laboratories (Pvt) Ltd.**  
45-G.T. Road, Lahore-Pakistan.  
URL: www.schazoo.com

# Lipidin®

10mg, 20mg & 40mg  
Atorvastatin Calcium

## COMPOSITION:

Each tablet contains:

Atorvastatin .....10 mg (as calcium trihydrate).  
Atorvastatin .....20 mg (as calcium trihydrate).  
Atorvastatin .....40 mg (as calcium trihydrate).

## CLINICAL PHARMACOLOGY:

### Mechanism of action/Pharmacodynamics:

Atorvastatin is a selective, competitive inhibitor of HMG-CoA reductase, the rate-limiting enzyme responsible for the conversion of 3-hydroxy-3-methylglutaryl-coenzyme A to mevalonate, a precursor of sterols, including cholesterol. Triglycerides and cholesterol in the liver are incorporated into very low density lipoprotein (VLDL) and released into the plasma for delivery to peripheral tissue. Low-density lipoprotein (LDL) is formed from VLDL and is catabolized primarily through the high affinity LDL receptor. Atorvastatin lowers plasma cholesterol and lipoprotein levels by inhibiting HMG-CoA reductase and cholesterol synthesis in the liver and by increasing the number of hepatic LDL receptors on the cell surface for enhanced uptake and catabolism of LDL. Atorvastatin reduces LDL production and the number of LDL particles. Atorvastatin produces a profound & sustained increase in LDL receptor activity coupled with a beneficial change in the quality of circulating LDL particles.

Atorvastatin is also effective in reducing LDL in patients with homozygous familial hypercholesterolemia, a population that has not normally responded to lipid lowering medication.

Atorvastatin as well as its some metabolites are pharmacologically active in humans. The liver is the primary site of cholesterol synthesis and LDL clearance. Drug dosage rather than systemic drug concentration correlates better with LDL-C reduction. Individualization of drug dosage should be based on therapeutic response.

### Pharmacokinetics:

**Absorption:** Atorvastatin is rapidly absorbed after oral administration ; maximum plasma concentration occurs within 1-2 hours. Extent of absorption increases in proportion to Atorvastatin dose. The absolute bioavailability of Atorvastatin is approximately 14% and the systemic availability of HMG-CoA reductase inhibitory activity is approximately 30%. Plasma concentration of Atorvastatin lowers (approximately 30% for Cmax and AUC) following evening drug administration compared with morning.

**Distribution:** Atorvastatin is ~98% bound to plasma proteins. Mean volume of distribution of Atorvastatin is approximately 381 liters. A red blood cell/plasma ratio of approximately 0.25 indicates poor drug penetration into red blood cells.

**Metabolism:** Atorvastatin is extensively metabolized to ortho & parahydroxylated derivatives and various beta-oxidation products. In vitro inhibition of HMG-CoA reductase by ortho and parahydroxylated metabolites is equivalent to that of Atorvastatin and approximately 70% of inhibitory activity is contributed by them. Cytochrome P450, 3A4 has importance to carry out the metabolism of Atorvastatin.

**Excretion:** Elimination of Atorvastatin and its metabolites occur primarily in bile, after hepatic and /or extrahepatic metabolism. The drug does not appear to undergo enterohepatic recirculation. Mean plasma elimination half life of Atorvastatin in human is approximately 14 hours; Due to the contribution of active metabolites the half-life of inhibitory activity for HMG-CoA reductase is 20-30 hours. Less than 2% of a dose of Atorvastatin is recovered in urine following oral administration.

## INDICATIONS:

Atorvastatin is indicated as an adjunct to diet for the reduction of elevated total cholesterol, LDL-cholesterol apolipoprotein B, & triglycerides & to increase HDL-cholesterol in patients with primary hypercholesterolemia, heterozygous familial and non-familial hypercholesterolemia and combined (mixed) hyperlipidemia. Atorvastatin is indicated as an adjunct to diet for the treatment of patients with elevated serum triglyceride levels, & for the treatment of patients with dysbeta lipoproteinemia who do not respond adequately to diet.

## DOSAGE AND ADMINISTRATION:

The patient should be placed on a standard cholesterol lowering diet before receiving Atorvastatin and should continue the diet during treatment with Atorvastatin. The usual starting dose is 10 to 80 mg once a day. Dose may be given any time of the day with or without food. Dosage should be individualized according to baseline LDL-C levels, the goal of therapy, and patient response.

## CONTRA-INDICATIONS:

Atorvastatin is contra-indicated in patients who are hypersensitive to any component of this medication, who have active liver disease or unexplained persistent elevations of serum transaminases exceeding three times the upper limit of normal, who are pregnant, who are breast-feeding or in women of childbearing potential who are not using adequate contraceptive measures.

## PRECAUTIONS AND WARNINGS:

**General:** Before instituting therapy with Atorvastatin, an attempt should be made to control hypercholesterolemia with appropriate diet, exercise, and weight reduction in obese patients.

**Hepatic Effects:** Liver function tests should be performed before the initiation of treatment and periodically thereafter.

**Skeletal Muscle Effects:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. Atorvastatin therapy should be discontinued if markedly elevated creatine phosphokinase (CPK) levels occur or myopathy is diagnosed or suspected.

**Pregnancy and lactation:** Atorvastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards to the fetus. Women taking Atorvastatin should not breast-feed their children because of the potential for

adverse reactions in nursing infants.

## DRUG INTERACTIONS:

Concurrent administration of Cyclosporine, fibric acid derivatives, azole antifungals, or niacin with Lipidin 10 mg, 20 mg & 40 mg increased the risk of myopathy. **Antacids:** Co-administration of Atorvastatin with an oral antacid suspension containing magnesium and aluminium hydroxides decreased Atorvastatin plasma concentrations approximately 35%; however, LDL-C reduction was not altered.

**Colestipol:** Plasma concentrations of Atorvastatin were lower (approximately 25%) when Colestipol was administered with Atorvastatin. However, lipid effects were greater when Atorvastatin and colestipol were co-administered than when either drug was given alone.

**Digoxin:** When multiple doses of digoxin and 10mg Atorvastatin were co-administered, steadystate plasma digoxin concentrations were unaffected. However, digoxin concentrations increased approximately 20% following administration of digoxin with 80mg Atorvastatin daily. Patients taking digoxin should be monitored appropriately.

**Erythromycin/Clarithromycin:** Co-administration of Atorvastatin and erythromycin (500mg QID), or clarithromycin (500mg BID) known inhibitors of cytochrome P450 3A4, was associated with higher plasma concentrations of Atorvastatin

**Oral contraceptives:** Co-administration with oral contraceptive containing norethindrone and ethinyl estradiol increased AUC values for norethindrone and ethinyl estradiol by approximately 30% and 20% respectively.

**Protease inhibitors:** Co-administration of Atorvastatin and Protease inhibitors, (known inhibitors of cytochrome P450 3A4) was associated with increased plasma concentrations of Atorvastatin.

## SIDE EFFECTS:

Atorvastatin is generally well-tolerated. Adverse reactions have usually been mild & transient. The most frequent adverse effects are constipation, flatulence, dyspepsia, abdominal pain, headache, nausea, myalgia, asthenia, diarrhoea, & insomnia.

Additional adverse effects are angioneurotic edema, muscle cramps, myositis, myopathy, paraesthesia, peripheral neuropathy, pancreatitis, hepatitis, cholestatic jaundice, anorexia, vomiting, alopecia, pruritus, rash, impotence, hyperglycemia & hypoglycemia

## OVERDOSAGE:

There is no specific treatment for Atorvastatin overdose. When an overdose occur, the patient should be treated symptomatically & supportive measures instituted, as required. Due to extensive drug binding to plasma proteins, hemodialysis is not expected to significantly enhance Atorvastatin clearance.

## STORAGE:

- \* Store in a cool and dry place.
- \* Protect from heat, light and moisture.
- \* Keep all medicines out of the reach of children.

## PACKING:

- Lipidin 10 mg tablets are available in (1 x 10) Alu-Alu pack .
- Lipidin 20 mg tablets are available in (1 x 5) Alu-Alu pack
- Lipidin 40 mg tablets are available in (2 x 5) Alu-Alu pack