1.3.1

Summary of Product Characteristics (SmPC)

1. Name of the medicinal Product

1.1 Name of the medicinal Product

Nifedipine Sustained Release Tablets

1.2 Strength

Each Film Coated Sustained Release Tablet contains:

Nifedipine BP 20 mg

Excipients Q.S.

Colour: Carmoisine, Sunset Yellow FCF, Indigo Carmine & Titanium Dioxide BP.

2. Qualitative and Quantitative Composition

2.1 Qualitative Declaration

Nifedipine BP

2.2 Quantitative Declaration

Sr. No.	Ingredients	Specifications	Label Claim (mg/tablet)	Function
1	Nifedipine	BP	20.00	Calcium Channel Blocker, Anti-hypertensive & Anti-anginal
2	Lactose Monohydrate	BP	54.75	Diluent
3	Hypromellose (Metolose 90-SH-4000)	BP	16.00	Polymer
4	Maize Starch	BP	11.56	Diluent
5	Povidone (PVPK-90)	BP	5.00	Binder
6	Isopropyl Alcohol	BP	40.00	Binding Solvent
7	Hypromellose (Metolose 90-SH-4000)	BP	9.00	Polymer
8	Purified Talc	BP	4.50	Anti-adherent

9	Colloidal Anhydrous Silica	BP	3.00	Glidant
10	Magnesium Stearate	BP	3.50	Lubricant
11	Sodium Starch Glycolate (Type-A)	BP	3.50	Surfactant
12	Hypromellose BP (Methocel 15)	BP	2.20	Plasticizer
13	Titanium Dioxide	BP	0.33	Colouring agent
14	Colour Carmosine Supra	IH	0.13	Colouring agent
15	Colour Susnet Yellow Lake	IH	0.22	Colouring agent
16	Colour Indigo Carmine Lake	IH	0.17	Colouring agent
17	Diethyl Phthalate	BP	0.22	Solvent
18	Dichloromethane	BP	50.0	Solvent
19	Isopropyl Alcohol	BP	30.0	Solvent

3. Pharmaceutical Form

Film Coated Sustained Release Tablet.

Purple coloured, round shaped, biconvex, film coated sustained release tablets, plain on both sides.

4. Clinical Particulars

4.1 Therapeutic Indications

Management of chronic stable or vasospastic angina; treatment of hypertension.

4.2 Posology and Method of Administration

Adults: The recommended starting dose is 10 mg every 12 hours swallowed with water with subsequent titration of dosage according to response. The dose may be adjusted to40mg every 12 hours.

Children: Nifedipine SR tablets are not recommended for use in children.

Elderly: The pham1acokinetics of nifedipine is altered in the elderly so that lower maintenance doses of nifedipine may be required compared to younger patients.

Renal impairment: Dosage adjustments are not usually required in patients with renal impairment.

Nifedipine Sustained-Release Tablets should be swallowed whole and should not be bitten or divided.

4.3 Contraindications

Nifedipine SR tablets are contra-indicated in patients with known hypersensitivity to nifedipine or other dihydropyridines because of the theoretical risk of cross reactivity.

Nifedipine SR tablets should not be used in clinically significant aortic stenosis, unstable angina, or during or within one month of a myocardial infarction. They should not be used in patients in cardiogenic shock.

Nifedipine SR tablets should not be used for the treatment of acute attacks of angina, or in patients who have had ischaemic pain following its administration previously.

The safety of Nifedipine SR tablets in malignant hypertension has not been established.

Nifedipine SR tablets should not be used for secondary prevention of myocardial infarction.

Nifedipine SR tablets are contra-indicated in patients with acute porphyria.

Nifedipine SR tablets should not be administered concomitantly with rifampicin since effective plasma levels of nifedipine may not be achieved owing to enzyme induction.

4.4 Special Warnings and Special Precautions for Use

Hypotension: Nifedipine should be used with caution in patients who are hypotensive; in patients with poor cardiac reserve; in patients with heart failure or significantly impaired left ventricular function as their condition may deteriorate; in diabetic patients as they may require adjustment of their diabetic therapy; and in dialysis patients with malignant hypertension and irreversible renal failure with hypovolaemia, since a significant drop in blood pressure may occur due to the vasodilator effects of nifedipine.

Peripheral Edema: It is a localized phenomenon thought to be associated with vasodilation of dependent arterioles and small blood vessels and not due to left ventricular dysfunction or generalized fluid retention. With patients whose angina or hypertension is complicated by

congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

Drive or use machinery: Excessive falls in blood pressure may result in transient blindness. If affected the patient should not attempt to drive or use machinery

Gastrointestinal strictures: Alterations in gastrointestinal anatomy (e.g, severe gastrointestinal narrowing, history of GI cancer, obstruction, bowel resection, gastric bypass, vertical banded gastroplasty) and underlying hypomotility disorders have lead to bezoar formation with sustained release forms.

Hepatic impairment: Use with caution in patients with hepatic impairment. Clearance of nifedipine is reduced in cirrhotic patients leading to increased systemic exposure; monitor closely for adverse effects/toxicity and consider dose adjustments.

Pregnancy: Category C. Adverse events were observed in animal reproduction studies. Nifedipine crosses the placenta. Use in pregnancy only when clearly needed and when the benefits outweigh the potential hazard to the fetus.

Lactation: Nifedipine sustained release tablets are not recommended for use in lactating mothers as it excretes into breast milk.

4.5 Interaction with other medicinal products and other forms of interaction

Grape fruit juice: Nifedipine should not be taken with grapefruit juice because bioavailability is increased.

Beta-adrenergic blocking agents: Increase the likelihood of congestive heart fai lure, severe hypotension, or exacerbation of angina.

Digitalis: Administration of nifedipine with digoxin increased digoxin levels. Hence it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing nifedipine to avoid possible over- or under digitalization.

Coumarin Anticoagulants: There have been rare reports of increased prothrombin time in patients taking coumarin anticoagulants to whom nifedipine was administered.

Alcohol, Alpha 1-Blockers, Antifungal Agents Cimetidine, Cisapride, Conivaptan, Cyclosporine (Systemic), Dasatinib, Fluconazole, H2-receptor antagonists Macrolide Antibiotics, Protease Inhibitors, Rifampicin, Antiepileptic: may increase the peak plasma concentration of Nifedipine

Barbiturates, Deferasirox, Nafcillin: It may decrease the peak plasma concentration of Nifedipine.

Clopidogrel: Calcium Channel Blockers may diminish the therapeutic effect of Ciopidogrel Diazoxide, MAO Inhibitors, Prostacycin Analogues, Phosphodiesterase 5 Inhibitors, Pentoxifylline: May enhance the hypotensive effect of Nifedipine.

4.6 Fertility, Pregnancy and Lactation

Pregnancy: Category C. Adverse events were observed in animal reproduction studies. Nifedipine crosses the placenta. Use in pregnancy only when clearly needed and when the benefits outweigh the potential hazard to the fetus.

Lactation: Nifedipine sustained release tablets are not recommended for use in lactating mothers as it excretes into breast milk.

4.7 Effects on ability To Drive and use Machines

No studies on the effects on the ability to drive and use machines have been performed.

4.8 Undesirable Effects

Common: Flushing, peripheral edema, dizziness, light headedness, giddiness, headache, Nausea, heartburn.

Rare: Palpitation, transient hypotension, CHF, nervousness, mood changes, fatigue, shakiness, jitteriness, sleep disturbances, difficulties in balance, fever, chills, dennatitis, pruritus, urticaria, sexual difficulties, diarrhea, constipation, cramps, flatulence, gingival hyperplasia, muscle cramps, tremor, weakness, inflammation, joint stiffness, blurred vision, cough, wheezing, nasal congestion, sore throat, chest congestion, dyspnea, diaphoresis.

Very rare: face edema, fever, hot flashes, malaise, periorbital edema, rigors, arrhythmia, hypotension, increased angina, tachycardia, syncope, anxiety, ataxia, decreased libido, depression, hypertonia, hypoesthesia, migraine, paroniria, tremor, vertigo, alopecia, increased sweating, urticaria, purpura, eructation, gastro esophageal reflux, gum hyperplasia, melena, vomiting, weight increase, back pain, gout, myalgias, upper respiratory tract infection, respiratory disorder, sinusitis, Abnormal lacrimation, abnormal vision, taste perversion, tinnitus, breast pain, dysuria, hematuria, nocturia.

4.9 Overdose

Experience with nifedipine over dosage is limited. Generally, over dosage with nifedipine leading to pronounced hypotension calls for active cardiovascular support including monitoring of cardiovascular and respiratory function, elevation of extremities, judicious use of calcium infusion, pressor agents and fluids . Clearance of nifedipine would be expected to be prolonged in patients with impaired liver function. Since nifedipine is highly protein-bound, dialysis is not likely to be of any benefit.

5. Pharmacological Properties

5.1 Pharmacodynamics Properties

Calcium Channel Blocker, Anti-hypertensive and anti-anginal

Inhibits calcium ion from entering the "slow channels" or select voltage-sensitive areas of vascular smooth muscle and myocardium during depolarization, producing a relaxation of coronary vascular smooth muscle and coronary vasodilation; increases myocardial oxygen delivery in patients with vasospastic angina; also reduces peripheral vascular resistance, producing a reduction in arterial blood pressure.

5.2 Pharmacokinetic Properties

Absorption: completely absorbed after oral administration. Plasma drug concentrations rise at a gradual, controlled rate after a Nifedipine Sustained-Release tablet dose and reach a plateau at approximately six hours after the first dose. For subsequent doses, relatively constant plasma concentrations at this plateau are maintained with minimal fluctuations over the 24-hourdosing interval.

Distribution: Crosses placenta; enters breast milk

Protein binding(concentration dependent): 92% to 98%

Metabolism: Hepatic via CYP3A4 to inactive metabolites

Bioavailability: 65% to 89%; bioavailability increased with significant hepatic disease

Half-life Elimination: Adults: Healthy: 2-5 hours; Cirrhosis: 7 hours; Elderly: 7 hours Time to peak, serum: Extended release: 7 hours (range: 4-8 hours)

Excretion: Urine (60% to 80%as inactive metabolites); feces.

5.3 Preclinical Safety Data

Not Applicable

6 Pharmaceutical Particulars

6.1 List of Excipients

Lactose (Lactose Monohydrate) BP

Hypromellose (Metolose 90-SH-4000) BP

Maize Starch BP

Povidone (PVPK-90) BP

Isopropyl Alcohol BP

Purified Talc BP

Colloidal Anhydrous Silica BP

Magnesium Stearate BP

Sodium Starch Glycolate (Type-A) BP

Hypromellose (HPLMC-E-15) BP

Titanium Dioxide BP

Colour carmosine Supra IH

Colour Susnet Yellow Lake IH

Colour Indigo Carmine Lake IH

Diethyl phthalate BP

Dichloromethane BP

6.2 Incompatibilities

None.

6.3 Shelf Life

36 months

6.4 Special Precautions for Storage

Store below 30^0C. Protect from light.

6.5 Nature and Contents of Container

Purple coloured, round shaped, biconvex, film coated sustained release tablets, plain on both sides. 10 tablets are packed in Alu-Alu blister pack. 10 blistes are r packed in printed carton along with packaging insert.

6.6 Special precaution for disposal and other handling

Any unused product or waste material should be disposed of in accordance with local requirements.

7. Registrant (Marketing Authorization Holder And Manufacturing Site Addresses)

7.1 Name and Address of Marketing Authorization Holder

GENERICS AND SPECIALITIES LTD.

31, AWONIYI ELEMO STREET,

OFF LATEEF SALAMI STREET.

AJAO ESTATE, LAGOS,

NIGERIA.

E-mail: info@zolonhealthcare.com

7.2 Name and Address of manufacturing site(s)

Lincoln Pharmaceuticals Limited

Trimul Estate, Khatraj, Taluka: Kalol,

District: Gandhinagar Gujarat, India.

Telephone no.: +91-07949-135000

Fax: +91-07941-078062

Email: info@lincolnpharma.com

Website: www.lincolnpharma.com

7.3 Marketing Authorization Number

To be included after obtaining first registration.

7.4 Date of First <Registration> / Renewal of The <Registration>

It will be applicable after registration of this product.

8. Date of Revision of the Text

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9. Dosimetry (If Applicable)

Not Applicable

10. Instructions for preparation of radiopharmaceuticals (if Applicable)

Not Applicable