ROSUVASTATIN CALCIUM - rosuvastatin calcium tablet, film coated Ascend Laboratories, LLC

HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use ROSUVASTATIN TABLETS safely and effectively. See full prescribing information for ROSUVASTATIN TABLETS. ROSUVASTATIN tablets, for oral use

Initial U.S. Approval: 2003

-----RECENT MAIOR CHANGES ------

Dosage and Administration Modifications Due to Drug Interactions (2.6) 07/2023 Contraindications, Pregnancy and Lactation (4) Remove

Removed 01/2023

Warnings and Precautions (5.2)

01/2023

Warnings and Precautions, Concomitant Coumarin Anticoagulants (5.4)

Removed 01/2023

-----INDICATIONS AND USAGE

Rosuvastatin tablets is an HMG Co-A reductase inhibitor (statin) indicated: (1)

- To reduce the risk of stroke, myocardial infarction, and arterial revascularization procedures in adults without established coronary heart disease who are at increased risk of cardiovascular (CV) disease based on age, hsCRP ≥2 mg/L, and at least one additional CV risk factor.
- As an adjunct to diet to reduce LDL-C in adults with primary hyperlipidemia.
- As an adjunct to diet to reduce low-density lipoprotein cholesterol (LDL-C) and slow the progression of atherosclerosis in adults.
- As an adjunct to diet to reduce LDL-C in adults and pediatric patients aged 8 years and older with heterozygous familial hypercholesterolemia (HeFH).
- As an adjunct to other LDL-C-lowering therapies, or alone if such treatments are unavailable, to reduce LDL-C in adults and pediatric patients aged 7 years and older with homozygous familial hypercholesterolemia (HoFH).
- As an adjunct to diet for the treatment of adults with:
- Primary dysbetalipoproteinemia.
- Hypertriglyceridemia.

..... DOSAGE AND ADMINISTRATION

Take orally with or without food, at any time of day. (2.1)

Assess LDL-C when clinically appropriate, as early as 4 weeks after initiating rosuvastatin tablets, and adjust dosage if necessary. (2.1)

Adults: Recommended dosage range is 5 to 40 mg once daily. (2.1)

Pediatric Patients with HeFH: Recommended dosage range is 5 to 10 mg once daily for patients aged 8 to less than 10 years of age, and 5 to 20 mg once daily for patients aged 10 years and older. (2.2) Pediatric Patients with HoFH: Recommended dosage is 20 mg once daily for patients aged 7 years and older. (2.2)

Asian Patients: Initiate at 5 mg once daily. Consider risks and benefits of treatment if not adequately controlled at doses up to 20 mg once daily. (2.4)

Patients with Severe Renal Impairment (not on hemodialysis): Initiate at 5 mg once daily; do not exceed 10 mg once daily. (2.5, 5.1, 8.6)

See full prescribing information for rosuvastatin tablets dosage and administration modifications due to drug interactions. (2.6)

------ DOSAGE FORMS AND STRENGTHS ------

Tablets: 5 mg, 10 mg, 20 mg, and 40 mg of rosuvastatin. (3)

-----CONTRAINDICATIONS

Acute liver failure or decompensated cirrhosis. (4)

Hypersensitivity to rosuvastatin or any excipients in rosuvastatin tablets. (4)

------WARNINGS AND PRECAUTIONS ------

- Myopathy and Rhabdomyolysis: Risk factors include age 65 years or greater, uncontrolled hypothyroidism, renal impairment, concomitant use with certain other drugs, and higher rosuvastatin tablets dosage. Asian patients may be at higher risk for myopathy. Discontinue rosuvastatin tablets if markedly elevated CK levels occur or myopathy is diagnosed or suspected. Temporarily discontinue rosuvastatin tablets in patients experiencing an acute or serious condition at high risk of developing renal failure secondary to rhabdomyolysis. Inform patients of the risk of myopathy and rhabdomyolysis when starting or increasing rosuvastatin tablets dosage. Instruct patients to promptly report unexplained muscle pain, tenderness, or weakness, particularly if accompanied by malaise or fever. (5.1, 7.1, 8.5, 8.6, 8.8)
- Immune-Mediated Necrotizing Myopathy (IMNM): Rare reports of IMNM, an autoimmune myopathy, have been reported with statin use. Discontinue rosuvastatin tablets if IMNM is suspected. (5.2)
- Hepatic Dysfunction: Increases in serum transaminases have occurred, some persistent. Rare reports of fatal and non-fatal hepatic failure have occurred. Consider testing liver enzymes before initiating

therapy and as clinically indicated thereafter. If serious hepatic injury with clinical symptoms and/or hyperbilirubinemia or jaundice occurs, promptly discontinue rosuvastatin tablets. (4,5.3, 8.7)

.....ADVERSE REACTIONS

Most frequent adverse reactions (rate \geq 2%) are headache, nausea, myalgia, asthenia, and constipation. (6.1)

To report SUSPECTED ADVERSE REACTIONS, contact Ascend Laboratories, LLC at 1-877-272-7901 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

----- DRUG INTERACTIONS -----

See full prescribing information for details regarding concomitant use of rosuvastatin tablets with other drugs that increase the risk of myopathy and rhabdomyolysis. (2.6, 7.1)

Aluminum and Magnesium Hydroxide Combination Antacids: Administer rosuvastatin tablets at least 2 hours after the antacid. (2.6, 7.2)

Wafarin: Obtain INR prior to starting rosuvastatin tablets. Monitor INR frequently until stable upon initiation, dose titration or discontinuation. (7.3)

------USE IN SPECIFIC POPULATIONS ------

- Pregnancy: May cause fetal harm. (8.1)
- Lactation: Breastfeeding not recommended during treatment with rosuvastatin tablets. (8.2)

See 17 for PATIENT COUNSELING INFORMATION.

Revised: 10/2023

FULL PRESCRIBING INFORMATION: CONTENTS*

- 1 INDICATIONS AND USAGE
- **2 DOSAGE AND ADMINISTRATION**
 - 2.1 General Dosage and Administration Information
 - 2.2 Recommended Dosage in Adult Patients
 - 2.3 Recommended Dosage in Pediatric Patients
 - 2.4 Dosing in Asian Patients
 - 2.5 Recommended Dosage in Patients with Renal Impairment
 - 2.6 Dosage and Administration Modifications Due to Drug Interactions
- **3 DOSAGE FORMS AND STRENGTHS**
- **4 CONTRAINDICATIONS**
- **5 WARNINGS AND PRECAUTIONS**
 - 5.1 Myopathy and Rhabdomyolysis
 - 5.2 Immune-Mediated Necrotizing Myopathy
 - 5.3 Hepatic Dysfunction
 - 5.4 Proteinuria and Hematuria
 - 5.5 Increases in HbA1c and Fasting Serum Glucose Levels

6 ADVERSE REACTIONS

- 6.1 Clinical Trials Experience
- 6.2 Postmarketing Experience

7 DRUG INTERACTIONS

- 7.1 Drug Interactions that Increase the Risk of Myopathy and Rhabdomyolysis with Rosuvastatin Tablets
- 7.2 Drug Interactions that Decrease the Efficacy of Rosuvastatin Tablets
- 7.3 Rosuvastatin Tablets Effects on Other Drugs

8 USE IN SPECIFIC POPULATIONS

- 8.1 Pregnancy
- 8.2 Lactation
- 8.4 Pediatric Use
- 8.5 Geriatric Use
- 8.6 Renal Impairment
- 8.7 Hepatic Impairment
- 8.8 Asian Patients
- **10 OVERDOSAGE**
- 11 DESCRIPTION
- 12 CLINICAL PHARMACOLOGY

- 12.1 Mechanism of Action
- 12.2 Pharmacodynamics
- 12.3 Pharmacokinetics
- 12.5 Pharmacogenomics

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

14 CLINICAL STUDIES

16 HOW SUPPLIED/STORAGE AND HANDLING

17 PATIENT COUNSELING INFORMATION

* Sections or subsections omitted from the full prescribing information are not listed.

FULL PRESCRIBING INFORMATION

1 INDICATIONS AND USAGE

Rosuvastatin tablets is indicated:

- To reduce the risk of stroke, myocardial infarction, and arterial revascularization procedures in adults without established coronary heart disease who are at increased risk of cardiovascular (CV) disease based on age, hsCRP \geq 2 mg/L, and at least one additional CV risk factor.
- As an adjunct to diet to:
- o Reduce LDL-C in adults with primary hyperlipidemia.
- o Reduce low-density lipoprotein cholesterol (LDL-C) and slow the progression of atherosclerosis in adults.
- o Reduce LDL-C in adults and pediatric patients aged 8 years and older with heterozygous familial hypercholesterolemia (HeFH).
- As an adjunct to other LDL-C-lowering therapies, or alone if such treatments are unavailable, to reduce LDL-C in adults and pediatric patients aged 7 years and older with homozygous familial hypercholesterolemia (HoFH).
- As an adjunct to diet for the treatment of adults with:
- o Primary dysbetalipoproteinemia.
- o Hypertriglyceridemia.

2 DOSAGE AND ADMINISTRATION

2.1 General Dosage and Administration Information

- Administer rosuvastatin tablets orally as a single dose at any time of day, with or without food. The tablet should be swallowed whole.
- Assess LDL-C when clinically appropriate, as early as 4 weeks after initiating rosuvastatin tablets, and adjust the dosage if necessary.
- If a dose is missed, advise patients not take an extra dose. Resume treatment with the next dose.

2.2 Recommended Dosage in Adult Patients

- The dosage range for rosuvastatin tablets is 5 to 40 mg orally once daily.
- The recommended dose of rosuvastatin tablets depends on a patient's indication for usage, LDL-C, and individual risk for cardiovascular events.

2.3 Recommended Dosage in Pediatric Patients

Dosage in Pediatric Patients 8 Years of Age and Older with HeFH

The recommended dosage range is 5 mg to 10 mg orally once daily in patients aged 8 years to less than 10 years and 5 mg to 20 mg orally once daily in patients aged 10

years and older.

<u>Dosage in Pediatric Patients 7 Years of Age and Older with HoFH</u> The recommended dosage is 20 mg orally once daily.

2.4 Dosing in Asian Patients

Initiate rosuvastatin tablets at 5 mg once daily due to increased rosuvastatin plasma concentrations. Consider the risks and benefits of rosuvastatin tablets when treating Asian patients not adequately controlled at doses up to 20 mg once daily [see Warnings and Precautions (5.1), Use in Specific Populations (8.8), and Clinical Pharmacology (12.3)].

2.5 Recommended Dosage in Patients with Renal Impairment

In patients with severe renal impairment (CLcr less than 30 mL/min/1.73 m2) not on hemodialysis, the recommended starting dosage is 5 mg once daily and should not exceed 10 mg once daily [see Warnings and Precautions (5.1) and Use in Specific Populations (8.6)].

There are no dosage adjustment recommendations for patients with mild and moderate renal impairment.

2.6 Dosage and Administration Modifications Due to Drug Interactions

Rosuvastatin tablets Dosage Modifications Due to Drug Interactions

Table 1 displays dosage modifications for Rosuvastatin tablets due to drug interactions [see Warnings and Precautions (5.1) and Drug Interactions (7.1)].

Table 1: Rosuvastatin tablets Dosage Modifications Due to Drug Interactions

Concomitantly Used Drug	Rosuvastatin tablets
	Dosage Modifications
Cyclosporine	Do not exceed 5 mg
	once daily.
Teriflunomide	Do not exceed 10 mg
	once daily.
Enasidenib	Do not exceed 10 mg
	once daily.
Capmatinib	Do not exceed 10 mg
	once daily.
Fostamatinib	Do not exceed 20 mg
	once daily.
Febuxostat	Do not exceed 20 mg
	once daily.
Gemfibrozil	Avoid concomitant use.
	If used concomitantly,
	initiate at 5 mg once daily
	and do not exceed 10
	mg once daily.
Tafamidis	Avoid concomitant use.
	If used concomitantly,
	initiate at 5 mg once daily
	and do not exceed 20
	mg once daily.
Antiviral Medications	
 Sofbuvir/velpatasvir/voxilaprevir 	Concomitant use not
Ledipasvir/sofosbuvir	recommended.

 Simeprevir Dasabuvir/ombitasvir/paritaprevir/ritonavir Elbasvir/Grazoprevir Sofosbuvir/Velpatasvir Glecaprevir/Pibrentasvir Atazanavir/Ritonavir Lopinavir/Ritonavir 	Initiate at 5 mg once daily. Do not exceed 10 mg once daily.
Darolutamide	Do not exceed 5 mg once daily.
Regorafenib	Do not exceed 10 mg once daily.

Rosuvastatin tablets Administration Modifications Due to Drug Interactions

When taking rosuvastatin tablets with an aluminum and magnesium hydroxide combination antacid, administer rosuvastatin tablets at least 2 hours before the antacid [see Drug Interactions (7.2)].

3 DOSAGE FORMS AND STRENGTHS

Rosuvastatin tablets:

- 5 mg of rosuvastatin: yellow color, circular, biconvex, film coated tablets debossed with "R" on one side and "5" on the other side.
- 10 mg of rosuvastatin: pink color, circular, biconvex, film coated tablets debossed with "R" on one side and "10" on the other side.
- 20 mg of rosuvastatin: pink color, circular, biconvex, film coated tablets debossed with "R" on one side and "20" on the other side.
- 40 mg of rosuvastatin: pink color, oval shape, biconvex, film coated tablets debossed with "R" on one side and "40" on the other side.

4 CONTRAINDICATIONS

Rosuvastatin tablets is contraindicated in the following conditions:

- Acute liver failure or decompensated cirrhosis [see Warnings and Precautions (5.3)].
- Hypersensitivity to rosuvastatin or any excipients in rosuvastatin tablets. Hypersensitivity reactions including rash, pruritus, urticaria, and angioedema have been reported with rosuvastatin tablets [see Adverse Reactions (6.1)].

5 WARNINGS AND PRECAUTIONS

5.1 Myopathy and Rhabdomyolysis

Rosuvastatin tablets may cause myopathy [muscle pain, tenderness, or weakness associated with elevated creatine kinase (CK)] and rhabdomyolysis. Acute kidney injury secondary to myoglobinuria and rare fatalities have occurred as a result of rhabdomyolysis with statins, including rosuvastatin tablets.

Risk Factors for Myopathy

Risk factors for myopathy include age 65 years or greater, uncontrolled hypothyroidism, renal impairment, concomitant use with certain other drugs (including other lipid-lowering therapies), and higher rosuvastatin tablets dosage. Asian patients on rosuvastatin tablets may be at higher risk for myopathy [see Drug Interactions (7.1) and Use in Specific Populations (8.8)]. The myopathy risk is greater in patients taking rosuvastatin tablets 40 mg daily compared with lower rosuvastatin tablets dosages.

Steps to Prevent or Reduce the Risk of Myopathy and Rhabdomyolysis

The concomitant use of rosuvastatin tablets with cyclosporine or gemfibrozil is not recommended. rosuvastatin tablets dosage modifications are recommended for patients taking certain antiviral medications, darolutamide, and regorafenib [see Dosage and Administration (2.6)]. Niacin, fibrates, and colchicine may also increase the risk of myopathy and rhabdomyolysis [see Drug Interactions (7.1)].

Discontinue rosuvastatin tablets if markedly elevated CK levels occur or if myopathy is either diagnosed or suspected. Muscle symptoms and CK elevations may resolve if rosuvastatin tablets is discontinued. Temporarily discontinue rosuvastatin tablets in patients experiencing an acute or serious condition at high risk of developing renal failure secondary to rhabdomyolysis (e.g., sepsis; shock; severe hypovolemia; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy).

Inform patients of the risk of myopathy and rhabdomyolysis when starting or increasing the rosuvastatin tablets dosage. Instruct patients to promptly report any unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever.

5.2 Immune-Mediated Necrotizing Myopathy

There have been rare reports of immune-mediated necrotizing myopathy (IMNM), an autoimmune myopathy, associated with statin use, including reports of recurrence when the same or a different statin was administered. IMNM is characterized by proximal muscle weakness and elevated serum creatine kinase that persist despite discontinuation of statin treatment; positive anti-HMG CoA reductase antibody; muscle biopsy showing necrotizing myopathy; and improvement with immunosuppressive agents. Additional neuromuscular and serologic testing may be necessary. Treatment with immunosuppressive agents may be required. Discontinue rosuvastatin tablets if IMNM is suspected.

5.3 Hepatic Dysfunction

Increases in serum transaminases have been reported with use of rosuvastatin tablets [see Adverse Reactions (6.1)]. In most cases, these changes appeared soon after initiation, were transient, were not accompanied by symptoms, and resolved or improved on continued therapy or after a brief interruption in therapy. In a pooled analysis of placebo-controlled trials, increases in serum transaminases to more than three times the ULN occurred in 1.1% of patients taking rosuvastatin tablets versus 0.5% of patients treated with placebo. Marked persistent increases of hepatic transaminases have also occurred with rosuvastatin tablets. There have been rare postmarketing reports of fatal and non-fatal hepatic failure in patients taking statins, including rosuvastatin tablets.

Patients who consume substantial quantities of alcohol and/or have a history of liver disease may be at increased risk for hepatic injury [see Use in Specific Populations (8.7)].

Consider liver enzyme testing before rosuvastatin tablets initiation and when clinically indicated thereafter. Rosuvastatin tablets is contraindicated in patients with acute liver failure or decompensated cirrhosis [see Contraindications (4)]. If serious hepatic injury with clinical symptoms and/or hyperbilirubinemia or jaundice occurs, promptly discontinue rosuvastatin tablets.

5.4 Proteinuria and Hematuria

In the rosuvastatin tablets clinical trial program, dipstick-positive proteinuria and microscopic hematuria were observed among rosuvastatin tablets treated patients. These findings were more frequent in patients taking rosuvastatin tablets 40 mg, when compared to lower doses of rosuvastatin tablets or comparator statins, though it was

generally transient and was not associated with worsening renal function. Although the clinical significance of this finding is unknown, consider a dose reduction for patients on rosuvastatin tablets therapy with unexplained persistent proteinuria and/or hematuria during routine urinalysis testing.

5.5 Increases in HbA1c and Fasting Serum Glucose Levels

Increases in HbA1c and fasting serum glucose levels have been reported with statins, including rosuvastatin tablets. Based on clinical trial data with rosuvastatin tablets, in some instances these increases may exceed the threshold for the diagnosis of diabetes mellitus [see Adverse Reactions (6.1)]. Optimize lifestyle measures, including regular exercise, maintaining a healthy body weight, and making healthy food choices.

6 ADVERSE REACTIONS

The following important adverse reactions are described below and elsewhere in the labeling:

Myopathy and Rhabdomyolysis [see Warnings and Precautions (5.1)]

Immune-Mediated Necrotizing Myopathy [see Warnings and Precautions (5.2)]

Hepatic Dysfunction [see Warnings and Precautions (5.3)]

Proteinuria and Hematuria [see Warnings and Precautions (5.4)]

Increases in HbA1c and Fasting Serum Glucose Levels [see Warnings and Precautions (5.5)]

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in clinical practice.

Adverse reactions reported in \geq 2% of patients in placebo-controlled clinical studies and at a rate greater than placebo are shown in Table 2. These studies had a treatment duration of up to 12 weeks.

Table 2: Adverse Reactions Reported in ≥2% of Patients Treated with rosuvastatin tablets and > Placebo in Placebo-Controlled Trials

Adverse	Placebo	<u>Rosuvastatin</u>	<u>Rosuvastatin</u>	Rosuvastatin	Rosuvastatin	Total
Reactions		<u>tablets</u> 5 mg	tablets 10	tablets 20	tablets 40	<u>Rosuvastatin</u>
	%	N=291	mg	mg	mg	tablets
		%	N=283	N=64	N=106	5 mg to 40
			%	%	%	mg
						N=744
						%
Headache	5.0	5.5	4.9	3.1	8.5	5.5
Nausea	3.1	3.8	3.5	6.3	0	3.4
Myalgia	1.3	3.1	2.1	6.3	1.9	2.8
Asthenia	2.6	2.4	3.2	4.7	0.9	2.7
Constipation	2.4	2.1	2.1	4.7	2.8	2.4

Other adverse reactions reported in clinical studies were abdominal pain, dizziness, hypersensitivity (including rash, pruritus, urticaria, and angioedema) and pancreatitis. The following laboratory abnormalities have also been reported: dipstick-positive proteinuria and microscopic hematuria; elevated creatine phosphokinase, transaminases, glucose, glutamyl transpeptidase, alkaline phosphatase, and bilirubin; and thyroid function abnormalities.

In the METEOR study, patients were treated with rosuvastatin tablets 40 mg (n=700) or placebo (n=281) with a mean treatment duration of 1.7 years. Adverse reactions reported in \geq 2% of patients and at a rate greater than placebo are shown in Table 3.

Table 3: Adverse Reactions Reported in \geq 2% of Patients Treated with rosuvastatin tablets and > Placebo in the METEOR Trial

Adverse Reactions	Placebo N=281 %	Rosuvastatin tablets 40 mg N=700 %
Myalgia	12.1	12.7
Arthralgia	7.1	10.1
Headache	5.3	6.4
Dizziness	2.8	4.0
Increased CPK	0.7	2.6
Abdominal pain	1.8	2.4
ALT greater than 3x ULN ¹	0.7	2.2

¹ Frequency recorded as abnormal laboratory value.

In the JUPITER study, patients were treated with rosuvastatin 20 mg (n=8901) or placebo (n=8901) for a mean duration of 2 years. In JUPITER, there was a significantly higher frequency of diabetes mellitus reported in patients taking rosuvastatin (2.8%) versus patients taking placebo (2.3%). Mean HbA1c was significantly increased by 0.1% in rosuvastatin-treated patients compared to placebo-treated patients. The number of patients with a HbA1c > 6.5% at the end of the trial was significantly higher in rosuvastatin-treated versus placebo-treated patients [see Clinical Studies (14)].

Adverse reactions reported in \geq 2% of patients and at a rate greater than placebo are shown in Table 4.

Table 4: Adverse Reactions Reported in ≥2% of Patients Treated with rosuvastatin tablets and > Placebo in the JUPITER Trial

Adverse Reactions	Placebo N=8901 %	Rosuvastatin tablets 20 mg N=8901 %	
Myalgia	6.6	7.6	
Arthralgia	3.2	3.8	
Constipation	3.0	3.3	
Diabetes mellitus	2.3	2.8	
Nausea	2.3	2.4	

Pediatric Patients with HeFH

In a 12-week controlled study in pediatric patients 10 to 17 years of age with HeFH with rosuvastatin tablets 5 to 20 mg daily [see Use in Specific Populations (8.4) and Clinical Studies (14)], elevations in serum CK greater than 10 x ULN were observed more frequently in rosuvastatin tablets-treated patients compared with patients receiving placebo. Four of 130 (3%) patients treated with rosuvastatin tablets (2 treated with 10 mg and 2 treated with 20 mg) had increased CK greater than 10 x ULN, compared to 0 of 46 patients on placebo.

6.2 Postmarketing Experience

The following adverse reactions have been identified during postapproval use of rosuvastatin tablets.

Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Blood Disorders: thrombocytopenia

Hepatobiliary Disorders: hepatitis, jaundice, fatal and non-fatal hepatic failure

Musculoskeletal Disorders: arthralgia, rare reports of immune-mediated necrotizing myopathy associated with statin use

Nervous System Disorders: peripheral neuropathy, rare postmarketing reports of cognitive impairment (e.g., memory loss, forgetfulness, amnesia, memory impairment, and confusion) associated with the use of all statins. The reports are generally nonserious, and reversible upon statin discontinuation, with variable times to symptom onset (1 day to years) and symptom resolution (median of 3 weeks). There have been rare reports of new-onset or exacerbation of myasthenia gravis, including ocular myasthenia, and reports of recurrence when the same or a different statin was administered.

Psychiatric Disorders: depression, sleep disorders (including insomnia and nightmares)

Reproductive System and Breast Disorders: gynecomastia

Respiratory Disorders: interstitial lung disease

Skin and Subcutaneous Tissue Disorders: drug reaction with eosinophilia and systemic symptoms (DRESS), lichenoid drug eruption

7 DRUG INTERACTIONS

7.1 Drug Interactions that Increase the Risk of Myopathy and Rhabdomyolysis with Rosuvastatin Tablets

Rosuvastatin is a substrate of CYP2C9 and transporters (such as OATP1B1, BCRP). Rosuvastatin plasma levels can be significantly increased with concomitant administration of inhibitors of CYP2C9 and transporters. Table 5 includes a list of drugs that increase the risk of myopathy and rhabdomyolysis when used concomitantly with rosuvastatin tablets and instructions for preventing or managing them [see Warnings and Precautions (5.1) and Clinical Pharmacology (12.3)].

Table 5: Drug Interactions that Increase the Risk of Myopathy and Rhabdomyolysis with Rosuvastatin Tablets

Cyclosporine	e					
Clinical	Cyclosporine increased rosuvastatin exposure 7-fold. The					
Impact:	risk of myopathy and rhabdomyolysis is increased with					
	concomitant use of cyclosporine or gemfibrozil with					
	rosuvastatin tablets.					
Intervention:	If used concomitantly, do not exceed a dose of rosuvastatin					
	tablets 5 mg once daily.					
Teriflunomic	le					
Clinical	Teriflunomide increased rosuvastatin exposure more than					
Impact:	2.5-fold. The risk of myopathy and rhabdomyolysis is					
	increased with concomitant use.					
Intervention:	In patients taking teriflunomide, do not exceed a dose of					
	rosuvastatin tablets 10 mg once daily.					
Enasidenib	· ·					

Clinical	Enasidenib increased rosuvastatin exposure	more than 2.4-				
Impact:	fold. The risk of myopathy and rhabdomyolysis is increased with concomitant use.					
Intervention:	In patients taking enasidenib, do not exceed rosuvastatin tablets 10 mg once daily.	a dose of				
Capmatinib	robustualis tublicas 10 mg once dully.					
Clinical	Capmatinib increased rosuvastatin exposure	e more than 2.1-				
Impact:	fold. The risk of myopathy and rhabdomyo with concomitant use.					
Intervention:		ceed a dose of				
Fostamatini						
Clinical	Fostamatinib increased rosuvastatin expo	sure more than				
Impact:	2.0-fold. The risk of myopathy and rhincreased with concomitant use.					
	In patients taking fostamatinib, do not exrosuvastatin tablets 20 mg once daily.	ceed a dose of				
Febuxostat						
Clinical	Febuxostat increased rosuvastatin exposure					
Impact:	fold. The risk of myopathy and rhabdomyo with concomitant use.					
	In patients taking febuxostat, do not ex rosuvastatin tablets 20 mg once daily.	ceed a dose of				
Gemfibrozil						
Clinical	Gemfibrozil significantly increased rosuvasta					
Impact:	gemfibrozil may cause myopathy when given alone. The risk of myopathy and rhabdomyolysis is increased with					
Intervention:	concomitant use of gemfibrozil with rosuvas Avoid concomitant use of gemfibrozil witablets. If used concomitantly, initiate rosuving once daily and do not exceed a dose tablets 10 mg once daily.	vith rosuvastatin vastatin tablets at				
Tafamidis						
Clinical Impact:	Tafamidis significantly increased rosuvastat tafamidis may cause myopathy when given myopathy and rhabdomyolysis is increased use of tafamidis with rosuvastatin tablets.	alone. The risk of				
	Avoid concomitant use of tafamidis with ros If used concomitantly, initiate rosuvastatin once daily and do not exceed a dose of ros 20 mg once daily. Monitor for signs of rhabdomyolysis if used concomitantly was tablets.	tablets at 5 mg suvastatin tablets myopathy and				
Anti-Viral M						
Clinical	Rosuvastatin plasma levels were significant					
Impact:	concomitant administration of many anti-v increases the risk of myopathy and rhabdom	nyolysis.				
Intervention:	Sofosbuvir/velpatasvir/voxilaprevirLedipasvir/sofosbuvir	Avoid concomitant use with rosuvastatin tablets.				
	Simeprevir	Initiate with				
	Dasabuvir/ombitasvir/paritaprevir/ritonavi					
	Elbasvir/grazoprevir	tablets 5 mg				
	Sofosbuvir/velpatasvir	once daily, and				
	Glecaprevir/pibrentasvir	do not exceed a				
	Atazanavir/ritonavir	dose of				

	Lopinavir/ritonavir	rosuvastatın tablets 10 mg once daily.
Darolutamid	le	
Clinical Impact:	Darolutamide increased rosuvastatin expos fold. The risk of myopathy and rhabdomy with concomitant use.	
Intervention:	In patients taking darolutamide, do not e rosuvastatin tablets 5 mg once daily.	exceed a dose of
Regorafenik)	
Clinical	Regorafenib increased rosuvastatin exp	osure and may
Impact:	increase the risk of myopathy.	
Intervention:	In patients taking regorafenib, do not e rosuvastatin tablets 10 mg once daily.	xceed a dose of
Fenofibrate	s (e.g., fenofibrate and fenofibric acid)	
Clinical	Fibrates may cause myopathy when given	
Impact:	myopathy and rhabdomyolysis is increased use of fibrates with rosuvastatin tablets.	
Intervention:	Consider if the benefit of using fibrates or rosuvastatin tablets outweighs the in myopathy and rhabdomyolysis. If condecided, monitor patients for signs ar myopathy, particularly during initiation of the upward dose titration of either drug.	creased risk of comitant use is nd symptoms of
Niacin	•	
Clinical	Cases of myopathy and rhabdomyolysis h	ave occurred with
Impact:	concomitant use of lipid-modifying doses (a with rosuvastatin tablets.	
Intervention:	Consider if the benefit of using lipid-mod g/day) of niacin concomitantly with ros outweighs the increased risk of rhabdomyolysis. If concomitant use is patients for signs and symptoms of myo during initiation of therapy and during upw of either drug.	suvastatin tablets myopathy and decided, monitor pathy, particularly
Colchicine		
Clinical	Cases of myopathy and rhabdomyolysis ha	
Impact:	with concomitant use of colchicine with ros	
Intervention:	rosuvastatin tablets outweighs the in myopathy and rhabdomyolysis. If con	creased risk of comitant use is nd symptoms of

7.2 Drug Interactions that Decrease the Efficacy of Rosuvastatin Tablets

Table 6 presents drug interactions that may decrease the efficacy of rosuvastatin tablets and instructions for preventing or managing them.

Table 6: Drug Interactions that Decrease the Efficacy of Rosuvastatin Tablets

Antacids					
Clinical	Concomitant	aluminum	and r	nagnesium	hydroxide
Impact:	combination	antacid adm	inistration	decreased	the mean
	exposure of	rosuvastatin	50% [see	e Clinical Ph	armacology

	(12	.3)].						
Intervention:	In I	patients	taking	antacid,	administer	rosuvastatin	tablets	at
	leas	st 2 hou	rs after	the anta	icid.			

7.3 Rosuvastatin Tablets Effects on Other Drugs

Table 7 presents rosuvastatin tablets effect on other drugs and instructions for preventing or managing them.

Table 7: Rosuvastatin Tablets Effects on Other Drugs

Warfarin					
Clinical Impact:	Rosuvastatin significantly increased the INR in patients				
	receiving warfarin [see Clinical Pharmacology (12.3)].				
Intervention:	In patients taking warfarin, obtain an INR before starti				
	rosuvastatin tablets and frequently enough after				
	initiation, dose titration or discontinuation to ensure that				
	no significant alteration in INR occurs. Once the INR is				
	stable, monitor INR at regularly recommended intervals.				

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

Discontinue rosuvastatin tablets when pregnancy is_recognized. Alternatively, consider the ongoing therapeutic needs of the individual patient.

Rosuvastatin tablets decreases synthesis of cholesterol and possibly other biologically active substances derived from cholesterol; therefore, rosuvastatin tablets may cause fetal harm when administered to pregnant patients based on the mechanism of action [see Clinical Pharmacology (12.1)]. In addition, treatment of hyperlipidemia is not generally necessary during pregnancy. Atherosclerosis is a chronic process and the discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hyperlipidemia for most patients.

Available data from case series and prospective and retrospective observational cohort studies over decades of use with statins in pregnant women have not identified a drugassociated risk of major congenital malformations. Published data from prospective and retrospective observational cohort studies with rosuvastatin tablets use in pregnant women are insufficient to determine if there is a drug-associated risk of miscarriage (see Data).

In animal reproduction studies, no adverse developmental effects were observed in pregnant rats or rabbits orally administered rosuvastatin during the period of organogenesis at doses that resulted in systemic exposures equivalent to human exposures at the maximum recommended human dose (MRHD) of 40 mg/day, based on AUC and body surface area (mg/m^2), respectively (see Data).

The estimated background risk of major birth defects and miscarriage for the indicated

population is unknown. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2 to 4% and 15 to 20%, respectively.

Data

Human Data

A Medicaid cohort linkage study of 1152 statin-exposed pregnant women compared to 886,996 controls did not find a significant teratogenic effect from maternal use of statins in the first trimester of pregnancy, after adjusting for potential confounders – including maternal age, diabetes mellitus, hypertension, obesity, and alcohol and tobacco use – using propensity score-based methods. The relative risk of congenital malformations between the group with statin use and the group with no statin use in the first trimester was 1.07 (95% confidence interval 0.85 to 1.37) after controlling for confounders, particularly pre-existing diabetes mellitus. There were also no statistically significant increases in any of the organ-specific malformations assessed after accounting for confounders. In the majority of pregnancies, statin treatment was initiated prior to pregnancy and was discontinued at some point in the first trimester when pregnancy was identified. Study limitations include reliance on physician coding to define the presence of a malformation, lack of control for certain confounders such as body mass index, use of prescription dispensing as verification for the use of a statin, and lack of information on non-live births.

Animal Data

In female rats given 5, 15 and 50 mg/kg/day before mating and continuing through to gestation day 7 resulted in decreased fetal body weight (female pups) and delayed ossification at 50 mg/kg/day (10 times the human exposure at the MRHD dose of 40 mg/day based on AUC).

In pregnant rats given 2, 10 and 50 mg/kg/day of rosuvastatin from gestation day 7 through lactation day 21 (weaning), decreased pup survival occurred at 50 mg/kg/day (dose equivalent to 12 times the MRHD of 40 mg/day based body surface area).

In pregnant rabbits given 0.3, 1, and 3 mg/kg/day of rosuvastatin from gestation day 6 to day 18, decreased fetal viability and maternal mortality was observed at 3 mg/kg/day (dose equivalent to the MRHD of 40 mg/day based on body surface area).

Rosuvastatin crosses the placenta in rats and rabbits and is found in fetal tissue and amniotic fluid at 3% and 20%, respectively, of the maternal plasma concentration following a single 25 mg/kg oral gavage dose on gestation day 16 in rats. In rabbits, fetal tissue distribution was 25% of maternal plasma concentration after a single oral gavage dose of 1 mg/kg on gestation day 18.

8.2 Lactation

Risk Summary

Limited data from case reports in published literature indicate that rosuvastatin tablets is present in human milk. There is no available information on the effects of the drug on the breastfed infant or the effects of the drug on milk production. Statins, including rosuvastatin tablets, decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol and may cause harm to the breastfed infant.

Because of the potential for serious adverse reactions in a breastfed infant, based on the mechanism of action, advise patients that breastfeeding is not recommended during treatment with rosuvastatin tablets [see Use in Specific Populations (8.1) and Clinical Pharmacology (12.1)].

8.4 Pediatric Use

The safety and effectiveness of rosuvastatin tablets as an adjunct to diet to reduce LDL-C have been established in pediatric patients 8 years of age and older with HeFH. Use of rosuvastatin tablets for this indication is based on one 12-week controlled trial with a 40-week open-label extension period in 176 pediatric patients 10 years of age and older with HeFH and one 2-year open-label, uncontrolled trial in 175 pediatric patients 8 years of age and older with HeFH [see Clinical Studies (14)]. In the 1-year trial with a 12-week controlled phase, there was no detectable effect of rosuvastatin tablets on growth, weight, BMI (body mass index), or sexual maturation in patients aged 10 to 17 years.

The safety and effectiveness of rosuvastatin tablets as an adjunct to other LDL-C-lowering therapies to reduce LDL-C have been established pediatric patients 7 years of age and older with HoFH. Use of rosuvastatin tablets for this indication is based on a randomized, placebo-controlled, cross-over study in 14 pediatric patients 7 years of age and older with HoFH [see Clinical Studies (14)].

The safety and effectiveness of rosuvastatin tablets have not been established in pediatric patients younger than 8 years of age with HeFH, younger than 7 years of age with HoFH, or in pediatric patients with other types of hyperlipidemia (other than HeFH or HoFH).

8.5 Geriatric Use

Of the total number of rosuvastatin tablets-treated patients in clinical studies, 3159 (31%) were 65 years and older, and 698 (6.8%) were 75 years and older. No overall differences in safety or effectiveness were observed between these subjects and younger subjects.

Advanced age (≥65 years) is a risk factor for rosuvastatin tablets-associated myopathy and rhabdomyolysis. Dose selection for an elderly patient should be cautious, recognizing the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy and the higher risk of myopathy. Monitor geriatric patients receiving rosuvastatin tablets for the increased risk of myopathy [see Warnings and Precautions (5.1)].

8.6 Renal Impairment

Rosuvastatin exposure is not influenced by mild to moderate renal impairment (CLcr \geq 30 mL/min/1.73 m²). Exposure to rosuvastatin is increased to a clinically significant extent in patients with severe renal impairment (CLcr <30 mL/min/1.73 m²) who are not receiving hemodialysis [see Clinical Pharmacology (12.3)].

Renal impairment is a risk factor for myopathy and rhabdomyolysis. Monitor all patients with renal impairment for development of myopathy. In patients with severe renal impairment not on hemodialysis, the recommended starting dosage is 5 mg daily and should not exceed 10 mg daily [see Dosage and Administration (2.5) and Warnings and Precautions (5.1)].

8.7 Hepatic Impairment

Rosuvastatin tablets is contraindicated in patients with acute liver failure or decompensated cirrhosis. Chronic alcohol liver disease is known to increase rosuvastatin exposure. Patients who consume substantial quantities of alcohol and/or have a history of liver disease may be at increased risk for hepatic injury [see Contraindications (4), Warning and Precautions (5.3) and Clinical Pharmacology (12.3)].

8.8 Asian Patients

Pharmacokinetic studies have demonstrated an approximate 2-fold increase in median exposure to rosuvastatin in Asian subjects when compared with White controls. Adjust the rosuvastatin tablets dosage in Asian patients [see Dosage and Administration (2.4) and Clinical Pharmacology (12.3)].

10 OVERDOSAGE

No specific antidotes for rosuvastatin tablets are known. Hemodialysis does not significantly enhance clearance of rosuvastatin. Contact Poison Control (1-800-222-1222) for latest recommendations.

11 DESCRIPTION

Rosuvastatin is a 3-hydroxy-3-methylglutaryl coenzyme A (HMG CoA)-reductase inhibitor.

The chemical name for rosuvastatin calcium is bis[(E)-7-[4-(4-fluorophenyl)-6-isopropyl-2- [methyl(methylsulfonyl)amino] pyrimidin-5-yl](3R,5S)-3,5-dihydroxyhept-6-enoic acid] calcium salt with the following structural formula:

The empirical formula for rosuvastatin calcium is $(C_{22}H_{27}FN_3O_6S)_2Ca$ and the molecular weight is 1001.14. Rosuvastatin calcium is a off -white to light yellow coloured powder that is soluble in N,N-Dimethyl formamide, acetone and acetonitrile and insoluble in water. Rosuvastatin calcium is a hydrophilic compound with a partition coefficient (octanol/water) of 0.13 at pH of 7.0.

Rosuvastatin tablets for oral use contain rosuvastatin 5 mg, 10 mg, 20 mg, or 40 mg (equivalent to 5.2 mg, 10.4 mg, 20.8 mg, and 41.6 mg rosuvastatin calcium) and the following inactive ingredients: Each tablet contains: crospovidone,magnesium oxide,microcrystalline cellulose,lactose monohydrate,magnesium stearate,hypromellose,triacetin,iron oxide red,iron oxide yellow (5 mg),and titanium dioxide.

Meets USP Dissolution Test 2.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

Rosuvastatin tablets is an inhibitor of HMG-CoA reductase, the rate-limiting enzyme that converts 3-hydroxy-3-methylglutaryl coenzyme A to mevalonate, a precursor of cholesterol.

12.2 Pharmacodynamics

Inhibition of HMG-CoA reductase by rosuvastatin accelerates the expression of LDL-receptors, followed by the uptake of LDL-C from blood to the liver, leading to a decrease in plasma LDL-C and total cholesterol. Sustained inhibition of cholesterol synthesis in the liver also decreases levels of very-low-density lipoproteins. The maximum LDL-C reduction of rosuvastatin tablets is usually achieved by 4 weeks and is maintained after that.

12.3 Pharmacokinetics

<u>Absorption</u>

In clinical pharmacology studies in man, peak plasma concentrations of rosuvastatin were reached 3 to 5 hours following oral dosing. Both $C_{\rm max}$ and AUC increased in approximate proportion to rosuvastatin tablets dose. The absolute bioavailability of rosuvastatin is approximately 20%. The AUC of rosuvastatin does not differ following evening or morning drug administration.

Effect of food

Administration of rosuvastatin tablets with food did not affect the AUC of rosuvastatin.

Distribution

Mean volume of distribution at steady-state of rosuvastatin is approximately 134 liters. Rosuvastatin is 88% bound to plasma proteins, mostly albumin. This binding is reversible and independent of plasma concentrations.

Elimination

Metabolism

Rosuvastatin is not extensively metabolized; approximately 10% of a radiolabeled dose is recovered as metabolite. The major metabolite is N-desmethyl rosuvastatin, which is formed principally by cytochrome P450 \ 2C9, and *in vitro* studies have demonstrated that N-desmethyl rosuvastatin has approximately one-sixth to one-half the HMG-CoA reductase inhibitory activity of the parent compound. Overall, greater than 90% of active plasma HMG-CoA reductase inhibitory activity is accounted for by the parent compound.

Excretion

Following oral administration, rosuvastatin and its metabolites are primarily excreted in the feces (90%). After an intravenous dose, approximately 28% of total body clearance was via the renal route, and 72% by the hepatic route. The elimination half-life of rosuvastatin is approximately 19 hours.

Specific Populations

Geriatric Patients

There were no differences in plasma concentrations of rosuvastatin between the nonelderly and elderly populations (age \geq 65 years).

In a population pharmacokinetic analysis of two pediatric trials involving patients with heterozygous familial hypercholesterolemia 10 to 17 years of age and 8 to 17 years of age, respectively, rosuvastatin exposure appeared comparable to or lower than rosuvastatin exposure in adult patients.

Male and Female Patients

There were no differences in plasma concentrations of rosuvastatin between men and women.

Racial or Ethnic Groups

A population pharmacokinetic analysis revealed no clinically relevant differences in pharmacokinetics among Caucasian, Hispanic, and Black or Afro-Caribbean groups. However, pharmacokinetic studies, including one conducted in the US, have demonstrated an approximate 2–fold elevation in median exposure (AUC and C_{max}) in Asian subjects when compared with a Caucasian control group.

Patients with Renal Impairment

Mild to moderate renal impairment ($CL_{cr} \ge 30$ mL/min/1.73 m²) had no influence on plasma concentrations of rosuvastatin. However, plasma concentrations of rosuvastatin increased to a clinically significant extent (about 3-fold) in patients with severe renal impairment ($CL_{cr} < 30$ mL/min/1.73 m²) not receiving hemodialysis compared with healthy subjects ($CL_{cr} > 80$ mL/min/1.73 m²).

Steady-state plasma concentrations of rosuvastatin in patients on chronic hemodialysis were approximately 50% greater compared with healthy volunteer subjects with normal renal function.

Patients with Hepatic Impairment

In patients with chronic alcohol liver disease, plasma concentrations of rosuvastatin were modestly increased.

In patients with Child–Pugh A disease, C_{max} and AUC were increased by 60% and 5%, respectively, as compared with patients with normal liver function. In patients with Child–Pugh B disease, C_{max} and AUC were increased 100% and 21%, respectively, compared with patients with normal liver function.

Drug Interactions Studies

Rosuvastatin clearance is not dependent on metabolism by cytochrome P450 3A4 to a clinically significant extent. Rosuvastatin is a substrate for certain transporter proteins including the hepatic uptake transporter organic anion-transporting polyprotein 1B1 (OATP1B1) and efflux transporter breast cancer resistance protein (BCRP). Concomitant administration of rosuvastatin tablets with medications that are inhibitors of these transporter proteins (e.g. cyclosporine, certain HIV protease inhibitors) may result in increased rosuvastatin plasma concentrations [see Dosage and Administration (2.6) and Drug Interactions (7.1)].

Table 8: Effect of Coadministered Drugs on Rosuvastatin Systemic Exposure

Coadministered	drug	and
dosing regimen		

		Mean Ratio (ratio with/without coadministered drug) No Effect=1.0		
	Dose (mg) ¹	Cnange in AUC	Change in C _{max}	
Sofosbuvir/velpatasvir/voxilaprevir (400 mg-100 mg-100 mg) + Voxilaprevir (100 mg) once daily for 15 days	10 mg,	7.39 ² (6.68-8.18) ³	18.88 ² (16.23-21.96) ³	
Cyclosporine – stable dose	10 mg, QD	_	_	
required (75 mg – 200 mg BID)		7.1 ²	11 ²	
Darolutamide 600 mg BID, 5 days	dose	5.2 ²	~5 ²	
Regorafenib 160 mg QD, 14 days	5 mg, single dose	3.8 ²	4.6 ²	
Atazanavir/ritonavir combination 300 mg/100 mg QD for 8 days	10 mg	3.1 ²	7 ²	
Simeprevir 150 mg QD, 7 days	10 mg,	2.8 ²	3.2 ²	
		$(2.3-3.4)^3$	$(2.6-3.9)^3$	
Velpatasvir 100 mg once daily	10 mg,	2.69^2	2.61^2	
	single dose	$(2.46-2.94)^3$	$(2.32-2.92)^3$ 7.13^2	
Ombitasvir 25 mg/paritaprevir 150 mg/ ritonavir 100 mg + dasabuvir 400 mg BID	5 mg, single dose	2.59 ² (2.09-3.21) ³	(5.11-9.96) ³	
Teriflunomide	Not available	2.51 ²	2.65 ²	
Enasidenib 100 mg QD, 28 days	10 mg, single dose	2.44	3.66	
Elbasvir 50 mg/grazoprevir 200	10 mg,	2.26 ²	5.49 ²	
mg once daily Glecaprevir 400 mg/pibrentasvir	single dose 5 mg, once	(1.89-2.69) ³ 2.15 ²	$(4.29-7.04)^3$ 5.62 ²	
120 mg once daily		$(1.88-2.46)^3$	$(4.80-6.59)^3$	
Lopinavir/ritonavir combination	20 mg, QD	2.1^{2}	5 ²	
400 mg/100 mg BID for 17 days	for 7 days	$(1.7-2.6)^3$	$(3.4-6.4)^3$	
Capmatinib 400 mg BID		2.08 ² (1.56-2.76) ³	3.04 ² (2.36- 3.92) ³	
Fostamatinib 100 mg BID	20 mg, single dose	1.96 ² (1.77-2.15) ³	1.88 ² (1.69-2.09) ³	
Febuxostat 120 mg QD for 4	10 mg,	1.9^2	2.1^2	
days	single dose	$(1.5-2.5)^3$	$(1.8-2.6)^3$	
Gemfibrozil 600 mg BID for 7 days	80 mg	1.9 ² (1.6-2.2) ³	2.2 ² (1.8-2.7) ³	
Tafamidis 61 mg BID on Days 1 &		1.97 ²	1.86 ²	
2, followed by QD on Days 3 to 9	10 mg	$(1.68-2.31)^3$	$(1.59-2.16)^3$	
Eltrombopag 75 mg QD, 5 days	10 mg	1.6 (1.4-1.7) ³	2 (1.8-2.3) ³	
Darunavir 600 mg/ritonavir 100	10 mg, QD	1.5	2.4	
mg BID, 7 days	for 7 days	$(1.0-2.1)^3$	$(1.6-3.6)^3$	
Tipranavir/ritonavir combination	10 mg	1.4	2.2	
Dropodaropo 400 mg RID		(1.2-1.6) ³ 1.4	$(1.8-2.7)^3$	
Dronedarone 400 mg BID Itraconazole 200 mg QD, 5 days	10 mg 10 mg or 80		1.4	
Thraconazole 200 mg QD, 3 days	mg	(1.2-1.6) ³ 1.3	$(1.2-1.5)^3$ 1.2	
Ezetimibe 10 mg QD, 14 days	10 mg, QD	$(1.1-1.4)^3$ 1.2	$(0.9-1.4)^3$	
Essampropayir/ritopayir 700		(0.9-1.6) ³	$(0.8-1.6)^3$	

rusamprenavii/monavii /uu mg/100 mg BID for 7 days	10 mg	1.1	1.5
Fenofibrate 67 mg TID for 7 days	10 mg	Δ	1.2 (1.1-1.3) ³
Rifampicin 450 mg QD, 7 days	20 mg	\leftrightarrow	
Aluminum & magnesium			
hydroxide combination antacid			
Administered simultaneously	40 mg		0.5^2
Administered 2 hours apart	40 mg	(0.4-0.5) ³	$(0.4-0.6)^3$
		0.8	0.8
		$(0.7-0.9)^3$	$(0.7-1.0)^3$
Ketoconazole 200 mg BID for 7	80 mg	1.0	1.0
days		$(0.8-1.2)^3$	$(0.7-1.3)^3$
Fluconazole 200 mg QD for 11	80 mg	1.1	1.1
days		$(1.0-1.3)^3$	$(0.9-1.4)^3$
Erythromycin 500 mg QID for 7	80 mg		0.7
days		$(0.7-0.9)^3$	$(0.5-0.9)^3$

QD= Once daily, BID= Twice daily, TID= Three times daily, QID= Four times daily

Table 9: Effect of Rosuvastatin Coadministration on Systemic Exposure to Other Drugs

Rosuvastatin Dosage Regimen	Coadministered Drug				
	Mean Ratio (ratio with/without coadminis drug) No Effect = 1.0				
	Name and Dose	Change in AUC	Change in C _{max}		
40 mg QD for 10 days	Warfarin ¹	R-Warfarin	R-Warfarin		
	25 mg single dose	$1.0 (1.0-1.1)^2$	1.0 (0.9-1.0) ²		
		S-Warfarin	S-Warfarin		
		1.1 (1.0-1.1) ²	1.0 (0.9-1.1) ²		
40 mg QD for 12 days	Digoxin 0.5 mg single	1.0 (0.9-1.2) ²	1.0 (0.9-1.2) ²		
	dose				
40 mg QD for 28 days	Oral Contraceptive (ethiny		EE 1.3		
	estradiol 0.035 mg &	$(1.2-1.3)^2$	$(1.2-1.3)^2$		
	norgestrel 0.180, 0.215	NG 1.3	NG 1.2		
	and 0.250 mg) QD for 21	$(1.3-1.4)^2$	$(1.1-1.3)^2$		
	Days				

EE = ethinyl estradiol, NG = norgestrel,

QD= Once daily

12.5 Pharmacogenomics

Disposition of rosuvastatin, involves OATP1B1 and other transporter proteins. Higher plasma concentrations of rosuvastatin have been reported in very small groups of

¹ Single dose unless otherwise noted.

²Clinically significant [see Dosage and Administration (2) and Warnings and Precautions (5)]

 $^{^{3}}$ Mean ratio with 90% CI (with/without coadministered drug, e.g., 1= no change, 0.7= 30% decrease, 11=11-fold increase in exposure)

¹Clinically significant pharmacodynamic effects [see Drug Interactions (7.3)]

 $^{^2}$ Mean ratio with 90% CI (with/without coadministered drug, e.g., 1= no change, 0.7=30% decrease, 11=11-fold increase in exposure)

patients (n=3 to 5) who have two reduced function alleles of the gene that encodes OATP1B1 (SLCO1B1 521T > C). The frequency of this genotype (i.e., SLCO1B1 521 C/C) is generally lower than 5% in most racial/ethnic groups. The impact of this polymorphism on efficacy and/or safety of rosuvastatin has not been clearly established.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

In a 104-week carcinogenicity study in rats at dose levels of 2, 20, 60, or 80 mg/kg/day by oral gavage, the incidence of uterine stromal polyps was significantly increased in females at 80 mg/kg/day at systemic exposure 20 times the human exposure at 40 mg/day based on AUC. Increased incidence of polyps was not seen at lower doses.

In a 107-week carcinogenicity study in mice given 10, 60, or 200 mg/kg/day by oral gavage, an increased incidence of hepatocellular adenoma/carcinoma was observed at 200 mg/kg/day at systemic exposures 20 times the human exposure at 40 mg/day based on AUC. An increased incidence of hepatocellular tumors was not seen at lower doses.

Rosuvastatin was not mutagenic or clastogenic with or without metabolic activation in the Ames test with *Salmonella typhimurium* and *Escherichia coli*, the mouse lymphoma assay, and the chromosomal aberration assay in Chinese hamster lung cells. Rosuvastatin was negative in the *in vivo* mouse micronucleus test.

In rat fertility studies with oral gavage doses of 5, 15, 50 mg/kg/day, males were treated for 9 weeks prior to and throughout mating and females were treated 2 weeks prior to mating and throughout mating until gestation day 7. No adverse effect on fertility was observed at 50 mg/kg/day (systemic exposures up to 10 times the human exposure at 40 mg/day based on AUC). In testicles of dogs treated with rosuvastatin at 30 mg/kg/day for one month, spermatidic giant cells were seen. Spermatidic giant cells were observed in monkeys after 6-month treatment at 30 mg/kg/day in addition to vacuolation of seminiferous tubular epithelium. Exposures in the dog were 20 times and in the monkey 10 times the human exposure at 40 mg/day based on body surface area. Similar findings have been seen with other drugs in this class.

14 CLINICAL STUDIES

Primary Prevention of Cardiovascular Disease

In the Justification for the Use of Statins in Primary Prevention: An Intervention Trial Evaluating Rosuvastatin (JUPITER) study, the effect of rosuvastatin tablets on the occurrence of major cardiovascular (CV) disease events was assessed in 17,802 men (\geq 50 years) and women (\geq 60 years) who had no clinically evident cardiovascular disease, LDL-C levels <130 mg/dL and hsCRP levels \geq 2 mg/L. The study population had an estimated baseline coronary heart disease risk of 11.6% over 10 years based on the Framingham risk criteria and included a high percentage of patients with additional risk factors such as hypertension (58%), low HDL-C levels (23%), cigarette smoking (16%), or a family history of premature CHD (12%). Patients had a median baseline LDL-C of 108 mg/dL and hsCRP of 4.3 mg/L. Patients were randomly assigned to placebo (n=8901) or rosuvastatin tablets 20 mg once daily (n=8901) and were followed for a mean duration of 2 years. The JUPITER study was stopped early by the Data Safety Monitoring Board due to meeting predefined stopping rules for efficacy in rosuvastatin tablets-treated subjects.

The primary end point was a composite end point consisting of the time-to-first

occurrence of any of the following major CV events: CV death, nonfatal myocardial infarction, nonfatal stroke, hospitalization for unstable angina or an arterial revascularization procedure.

Rosuvastatin tablets significantly reduced the risk of major CV events (252 events in the placebo group vs. 142 events in the rosuvastatin group) with a statistically significant (p<0.001) relative risk reduction of 44% and absolute risk reduction of 1.2% (see Figure 1). The risk reduction for the primary end point was consistent across the following predefined subgroups: age, sex, race, smoking status, family history of premature CHD, body mass index, LDL-C, HDL-C, and hsCRP levels.

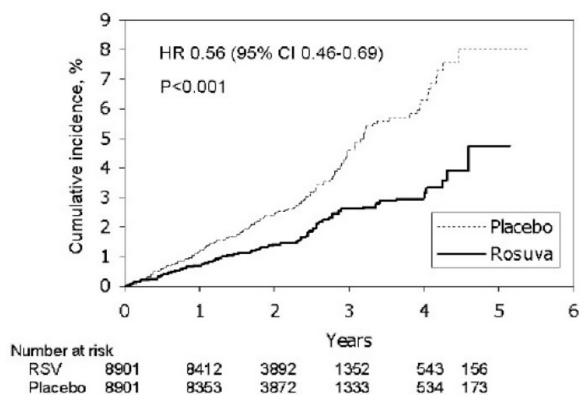


Figure 1. Time to First Occurrence of Major Cardiovascular Events in JUPITER

The individual components of the primary end point are presented in Figure 3. Rosuvastatin tablets significantly reduced the risk of nonfatal myocardial infarction, nonfatal stroke, and arterial revascularization procedures. There were no significant treatment differences between the rosuvastatin tablets and placebo groups for death due to cardiovascular causes or hospitalizations for unstable angina.

Rosuvastatin tablets significantly reduced the risk of myocardial infarction (6 fatal events and 62 nonfatal events in placebo-treated subjects vs. 9 fatal events and 22 nonfatal events in rosuvastatin tablets-treated subjects) and the risk of stroke (6 fatal events and 58 nonfatal events in placebo-treated subjects vs. 3 fatal events and 30 nonfatal events in rosuvastatin tablets-treated subjects).

In a post-hoc subgroup analysis of JUPITER subjects (rosuvastatin=725, placebo=680) with a hsCRP \geq 2 mg/L and no other traditional risk factors (smoking, BP \geq 140/90 or taking antihypertensives, low HDL-C) other than age, after adjustment for high HDL-C, there was no significant treatment benefit with rosuvastatin tablets treatment.

Figure 2. Major CV Events by Treatment Group in JUPITER

	Number	of events				
End point	Rosuva 20 mg (n=8901) n (rate*)	Placebo 20 mg (n=8901) n (rate*)	HR (95% CI)	P value	Hazard Ratio	(-—95%—-)
Primary end point (MCE)	142 (7.6)	252 (13.6)	0.56 (0.46, 0.69)	<0.001	-•-	
Cardiovascular death**	35 (1.9)	44 (2.4)	0.80 (0.51, 1.24)	0.315	-	_
Nonfatal Stroke	30 (1.6)	58 (3.1)	0.52 (0.33, 0.80)	0.003	-•-	
Nonfatal MI	22 (1.2)	62 (3.3)	0.35 (0.22, 0.58)	< 0.001	-•-	
Hospitalized unstable Angina	16 (0.9)	27 (1.5)	0.59 (0.32, 1.10)	0.093	-•	-
Arterial revascularization	71 (3.8)	131 (7.1)	0.54 (0.41, 0.72)	<0.001	-	
				(0.1	

^{*} event rate/1000-patient years

At one year, rosuvastatin tablets increased HDL-C and reduced LDL-C, hsCRP, total cholesterol and serum triglyceride levels (p<0.001 for all versus placebo).

Primary Hyperlipidemia in Adults

Rosuvastatin tablets reduces Total-C, LDL-C, ApoB, non-HDL-C, and TG, and increases HDL-C, in adult patients with hyperlipidemia and mixed dyslipidemia.

In a multicenter, double-blind, placebo-controlled study in patients with hyperlipidemia, rosuvastatin tablets given as a single daily dose (5 to 40 mg) for 6 weeks significantly reduced Total-C, LDL-C, non-HDL-C, and ApoB, across the dose range (Table 10).

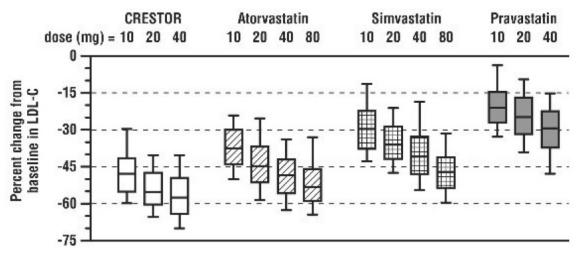
Table 10: Lipid-modifying Effect of Rosuvastatin Tablets in Adult Patients with Hyperlipidemia (Adjusted Mean % Change from Baseline at Week 6)

Dose	N	Total-C	LDL-C	Non-HDL-	ApoB	TG	HDL-C
				С			
Placebo	13	-5	-7	-7	-3	-3	3
Rosuvastatin	17	-33	-45	-44	-38	-35	13
tablets 5 mg							
Rosuvastatin	17	-36	-52	-48	-42	-10	14
tablets 10							
mg							
Rosuvastatin	17	-40	-55	-51	-46	-23	8
tablets 20							
mg							
Rosuvastatin	18	-46	-63	-60	-54	-28	10
tablets 40							
mg							

Rosuvastatin tablets was compared with the statins (atorvastatin, simvastatin, and pravastatin) in a multicenter, open-label, dose-ranging study of 2240 patients with hyperlipidemia or mixed dyslipidemia. After randomization, patients were treated for 6 weeks with a single daily dose of either rosuvastatin tablets, atorvastatin, simvastatin, or pravastatin (Figure 3 and Table 11).

Figure 3. Percent LDL-C Change by Dose of Rosuvastatin Tablets, Atorvastatin, Simvastatin, and Pravastatin at Week 6 in Adult Patients with Hyperlipidemia or Mixed Dyslipidemia

^{**} Cardiovascular death included fatal MI, fatal stroke, sudden death, and other adjudicated causes of CV death



Box plots are a representation of the 25th, 50th, and 75th percentile values,_with whiskers representing the 10th and 90th percentile values. Mean baseline LDL-C: 189 mg/dL

Table 11: Percent Change in LDL-C by Dose of Rosuvastatin Tablets, Atorvastatin, Simvastatin, and Pravastatin From Baseline to Week 6 (LS Mean¹) in Adult Patients with Hyperlipidemia or Mixed Dyslipidemia (Sample Sizes Ranging from 156-167 Patients Per Group)

Treatment Daily Dose					
Treatment	10 mg	20 mg	40 mg	80 mg	
Rosuvastatin tablets	-46 ²	-52 ³	-55 ⁴		
Atorvastatin	-37	-43	-48	-51	
Simvastatin	-28	-35	-39	-46	
Pravastatin	-20	-24	-30		

¹Corresponding standard errors are approximately 1.00.

Slowing of the Progression of Atherosclerosis

In the Measuring Effects on Intima Media Thickness: an Evaluation Of Rosuvastatin 40 mg (METEOR) study, the effect of therapy with rosuvastatin tablets on carotid atherosclerosis was assessed by B-mode ultrasonography in patients with elevated LDL-C, at low risk (Framingham risk <10% over ten years) for symptomatic coronary artery disease and with subclinical atherosclerosis as evidenced by carotid intimal-medial thickness (cIMT). In this double-blind, placebo-controlled clinical study 984 adult patients were randomized (of whom 876 were analyzed) in a 5:2 ratio to rosuvastatin tablets 40 mg or placebo once daily. Ultrasonograms of the carotid walls were used to determine the annualized rate of change per patient from baseline to two years in mean maximum cIMT of 12 measured segments. The estimated difference in the rate of change in the maximum cIMT analyzed over all 12 carotid artery sites between patients treated with rosuvastatin tablets and placebo-treated patients was -0.0145 mm/year (95% CI –

 $^{^2}$ Rosuvastatin tablets 10 mg reduced LDL-C significantly more than atorvastatin 10 mg; pravastatin 10 mg, 20 mg, and 40 mg; simvastatin 10 mg, 20 mg, and 40 mg. (p< 0.002)

 $^{^3}$ Rosuvastatin tablets 20 mg reduced LDL-C significantly more than atorvastatin 20 mg and 40 mg; pravastatin 20 mg and 40 mg; simvastatin 20 mg, 40 mg, and 80 mg. (p< 0.002)

 $^{^{4}}$ Rosuvastatin tablets 40 mg reduced LDL-C significantly more than atorvastatin 40 mg; pravastatin 40 mg; simvastatin 40 mg, and 80 mg. (p< 0.002)

The annualized rate of change from baseline for the placebo group was +0.0131 mm/year (p<0.0001). The annualized rate of change from baseline for the group treated with rosuvastatin tablets was -0.0014 mm/year (p=0.32).

At an individual patient level in the group treated with rosuvastatin tablets, 52.1% of patients demonstrated an absence of disease progression (defined as a negative annualized rate of change), compared to 37.7% of patients in the placebo group.

HeFH in Adults

In a study of adult patients with HeFH (baseline mean LDL of 291 mg/dL), patients were randomized to rosuvastatin tablets 20 mg or atorvastatin 20 mg. The dose was increased at 6-week intervals. Significant LDL-C reductions from baseline were seen at each dose in both treatment groups (Table 12).

Table 12: LDL-C Percent Change from Baseline

			Atorvastatin (n=187) LS Mean ¹ (95% CI)
Week 6	20 mg	-47% (-49%, -46%)	-38% (-40%, -36%)
Week 12	40 mg	-55% (-57%, -54%)	-47% (-49%, -45%)
Week 18	80 mg	NA	-52% (-54%, -50%)

 $^{^{1}}$ LS Means are least square means adjusted for baseline LDL-C

HeFH in Pediatric Patients

In a double-blind, randomized, multicenter, placebo-controlled, 12-week study, 176 (97 male and 79 female) children and adolescents with heterozygous familial hypercholesterolemia were randomized to rosuvastatin 5 mg, 10 mg or 20 mg or placebo daily. Patients ranged in age from 10 to 17 years (median age of 14 years) with approximately 30% of the patients 10 to 13 years and approximately 17%, 18%, 40%, and 25% at Tanner stages II, III, IV, and V, respectively. Females were at least 1 year postmenarche. Mean LDL-C at baseline was 233 mg/dL (range of 129 to 399). The 12-week double-blind phase was followed by a 40 week open label dose-titration phase, where all patients (n=173) received 5 mg, 10 mg or 20 mg rosuvastatin daily.

Rosuvastatin significantly reduced LDL-C (primary end point), total cholesterol and ApoB levels at each dose compared to placebo. Results are shown in Table 13 below.

Table 13: Lipid-Modifying Effects of Rosuvastatin Tablets in Pediatric Patients 10 to 17 years of Age with Heterozygous Familial Hypercholesterolemia (Least-Squares Mean Percent Change from Baseline To Week 12)

Dose (mg)	N	LDL-C	HDL-C	Total-C	TG ¹	АроВ
Placebo	46	-1%	+7%	0%	-7%	-2%
5	42	-38%	+4% ²	-30%	-13% ²	-32%
10	44	-45%	+11% ²	-34%	-15% ²	-38%
20	44	-50%	+9% ²	-39%	16% ²	-41%

¹ Median percent change

Rosuvastatin was also studied in a two-year open-label, uncontrolled, titration-to-goal trial that included 175 children and adolescents with heterozygous familial hypercholesterolemia who were 8 to 17 years old (79 boys and 96 girls). All patients had a documented genetic defect in the LDL receptor or in ApoB. Approximately 89% were White, 7% were Asian, 1% were Black, and fewer than 1% were Hispanic. Mean LDL-C at baseline was 236 mg/dL. Fifty-eight (33%) patients were prepubertal at baseline. The starting rosuvastatin dosage for all children and adolescents was 5 mg once daily. Children 8 to less than 10 years of age (n=41 at baseline) could titrate to a maximum dosage of 10 mg once daily, and children and adolescents 10 to 17 years of age could titrate to a maximum dosage of 20 mg once daily.

The reductions in LDL-C from baseline were generally consistent across age groups within the trial as well as with previous experience in both adult and pediatric controlled trials.

HoFH in Adult and Pediatric Patients

In an open-label, forced-titration study, HoFH patients (n=40, 8-63 years) were evaluated for their response to rosuvastatin tablets 20 to 40 mg titrated at a 6-week interval. In the overall population, the mean LDL-C reduction from baseline was 22%. About one-third of the patients benefited from increasing their dose from 20 mg to 40 mg with further LDL-C lowering of greater than 6%. In the 27 patients with at least a 15% reduction in LDL-C, the mean LDL-C reduction was 30% (median 28% reduction). Among 13 patients with an LDL-C reduction of <15%, 3 had no change or an increase in LDL-C. Reductions in LDL-C of 15% or greater were observed in 3 of 5 patients with known receptor negative status.

HoFH in Pediatric Patients

Rosuvastatin tablets was studied in a randomized, double-blind, placebo-controlled, multicenter, crossover study in 14 pediatric patients with HoFH. The study included a 4-week dietary lead-in phase during which patients received rosuvastatin tablets 10 mg daily, a cross-over phase that included two 6-week treatment periods with either rosuvastatin tablets 20 mg or placebo in random order, followed by a 12-week openlabel phase during which all patients received rosuvastatin tablets 20 mg. Patients ranged in age from 7 to 15 years of age (median 11 years), 50% were male, 71% were White, 21% were Asian, 7% were Black, and no patients were of Hispanic ethnicity. Fifty percent were on apheresis therapy and 57% were taking ezetimibe. Patients who entered the study on apheresis therapy or ezetimibe continued the treatment throughout the entire study. Mean LDL-C at baseline was 416 mg/dL (range 152 to 716 mg/dL). A total of 13 patients completed both treatment periods of the randomized cross-over phase; one patient withdrew consent due to inability to have blood drawn during the cross-over phase.

Rosuvastatin tablets 20 mg significantly reduced LDL-C, total cholesterol, ApoB, and non-HDL-C compared to placebo (Table 14).

Table 14: Lipid-modifying Effects of Rosuvastatin Tablets in Pediatric Patients 7 to 15 years of Age with Homozygous Familial Hypercholesterolemia After 6 Weeks

	Placebo (N=13)	Rosuvastatin tablets 20 mg (N=13)	Percent difference (95% CI)
LDL-C (mg/dL)	481	396	-22.3% (-33.5, -9.1) ¹
Total-C (mg/dL)	539	448	-20.1% (-29.7, -9.1) ²

Non-HDL-C (mg/dL)	505	412	-22.9% (-33.7, - 10.3) ²
ApoB (mg/dL)	268	235	-17.1% (-29.2, -2.9) ³

% Difference estimates are based on transformations of the estimated mean difference in log LDL measurements between rosuvastatin tablets and placebo using a mixed model adjusted for study period 1 p=0.005, 2 p=0.003, 3 p=0.024

Primary Dysbetalipoproteinemia in Adults

In a randomized, multicenter, double-blind crossover study, 32 adult patients (27 with $\[epsilon 2/\[epsilon 2/\$

Table 15: Lipid-modifying Effects of rosuvastatin tablets 10 mg and 20 mg in Adult Patients with Primary Dysbetalipoproteinemia (Type III hyperlipoproteinemia) After Six Weeks by Median Percent Change (95% CI) from Baseline (N=32)

	Baseline (mg/dL)	change from baseline (95 % CI)	Median percent change from baseline (95% CI) rosuvastatin tablets 20 mg
Total-C	342.5	-43.3 (-46.9, -37.5)	-47.6 (-51.6,-42.8)
Triglycerides	503.5	-40.1 (-44.9, -33.6)	-43.0 (-52.5, -33.1)
Non-HDL-C	294.5	-48.2 (-56.7, -45.6)	-56.4 (-61.4, -48.5)
VLDL-C + IDL- C	-209.5	-46.8 (-53.7, -39.4)	-56.2 (-67.7, -43.7)
LDL-C	112.5	-54.4 (-59.1, -47.3)	-57.3 (-59.4, -52.1)
HDL-C	35.5	10.2 (1.9, 12.3)	11.2 (8.3, 20.5)
RLP-C	82.0	-56.4 (-67.1, -49.0)	-64.9 (-74.0, -56.6)
Аро-Е	16.0	-42.9 (-46.3, -33.3)	-42.5 (-47.1, -35.6)

Hypertriglyceridemia in Adults

In a double-blind, placebo-controlled study in adult patients with baseline TG levels from 273 to 817 mg/dL, rosuvastatin tablets given as a single daily dose (5 to 40 mg) over 6 weeks significantly reduced serum TG levels (Table 16).

Table 16: Lipid-Modifying Effect of rosuvastatin tablets in Adult Patients with Primary Hypertriglyceridemia After Six Weeks by Median (Min, Max) Percent Change from Baseline to Week 6

	(n=26)	tablets 5 mg	tablets 10 mg	mg	tablets 40 mg
		•	(n=23)	(n=27)	(n=25)
Triglycerides	1 (-40,	-21 (-58, 38)	-37 (-65, 5)	-37 (-72, 11)	-43 (-80, -7)
	72)				
Non-HDL-C	2 (-13,	-29 (-43, -8)	-49 (-59, -20)	-43 (-74, 12)	-51 (-62, -6)
	19)				
Total-C	1 (-13,	-24 (-40, -4)	-40 (-51, -14)	-34 (-61, -11)	-40 (-51, -4)

	17)				
LDL-C	5 (-30, 52)	-28 (-71, 2)	-45 (-59, 7)	-31 (-66, 34)	-43 (-61, -3)
HDL-C	-3 (-25, 18)	3 (-38, 33)	8 (-8, 24)	22 (-5, 50)	17 (-14, 63)

16 HOW SUPPLIED/STORAGE AND HANDLING

Rosuvastatin tablets, USP are supplied as:

Strength	How Supplied	NDC	Tablet Description
	Bottle of 30 tablets	67877-439-	Yellow color, circular, biconvex,
		30	_film coated tablets debossed
	Bottle of 90 tablets		with "R" on one side and "5" on
		90	the other side.
5 mg		067877-439-	
	tablets	05	
	Blister pack of 100		
	(10 x 10) unit-dos	2 38	
	tablets		
	Bottle of 30 tablets		Pink color circular, biconvex, film
	D 111	30	coated tablets debossed with
	Bottle of 90 tablets		"R" on one side and "10" on the
10	Bottle of 500	90	other side.
10 mg	Bottle of 500 tablets	067877-440- 05	
	Blister pack of 100		_
	(10 x 10) unit-dos		
	tablets	30	
	Bottle of 30 tablets	67877-441-	Pink color, circular, biconvex,
		30	film coated tablets debossed
	Bottle of 90 tablets		with "R" on one side and "20"
		90	on the other side.
20 mg	Bottle of 500	067877-441-	
	tablets	05	
	Blister pack of 100	067877-441-	
	(10 x 10) unit-dose	2 38	
	tablets		
	Bottle of 30 tablets		Pink color, oval shape, biconvex,
		30	_film coated tablets debossed
	Bottle of 90 tablets		with "R" on one side and "40"
		90	on the other side.
40 mg		067877-442-	
	tablets	05	
	Blister pack of 100		
	(10 x 10) unit-dos	3 8	
	tablets		

Storage

Store at 20°C to 25°C (68°F to 77°F) [see USP Controlled Room Temperature]. Protect from moisture.

17 PATIENT COUNSELING INFORMATION

Advise the patient to read the FDA-approved patient labeling (Patient Information).

Myopathy and Rhabdomyolysis

Advise patients that rosuvastatin tablets may cause myopathy and rhabdomyolysis. Inform patients that the risk is also increased when taking certain types of medication and they should discuss all medication, both prescription and over the counter, with their healthcare provider. Instruct patients to promptly report any unexplained muscle pain, tenderness or weakness particularly if accompanied by malaise or fever [see Warnings and Precautions (5.1), and Drug Interactions (7.1)].

Hepatic Dysfunction

Inform patients that rosuvastatin tablets may cause liver enzyme elevations and possibly liver failure. Advise patients to promptly report fatigue, anorexia, right upper abdominal discomfort, dark urine or jaundice [see Warnings and Precautions (5.3)].

Increases in HbA1c and Fasting Serum Glucose Levels

Inform patients that increases in HbA1c and fasting serum glucose levels may occur with rosuvastatin tablets. Encourage patients to optimize lifestyle measures, including regular exercise, maintaining a healthy body weight, and making healthy food choices [see Warnings and Precautions (5.5)].

Pregnancy

Advise pregnant patients and patients who can become pregnant of the potential risk to a fetus. Advise patients to inform their healthcare provider of a known or suspected pregnancy to discuss if rosuvastatin tablets should be discontinued [see Use in Specific Populations (8.1)].

Lactation

Advise patients that breastfeeding during treatment with rosuvastatin tablets is not recommended [see Use in Specific Populations (8.2)].

Concomitant Use of Antacids

When taking rosuvastatin tablets with an aluminum and magnesium hydroxide combination antacid, the antacid should be taken at least 2 hours after rosuvastatin tablets administration [see Drug Interactions (7.2)].

Missed Doses

If a dose is missed, advise patients not take an extra dose. Just resume the usual schedule [see General Dosage and Administration Information (2.1)].

Manufactured by:

Alkem Laboratories Ltd.,

Mumbai - 400 013, INDIA.

Distributed by:

Ascend Laboratories, LLC

Parsippany, NJ 07054

Revised: October, 2023

For Patient Information, please visit:

www.ascendlaboratories.com/pti/rosuvastatintabs.pdf

PATIENT INFORMATION

Rosuvastatin Tablets, USP (roe soo" va stat' in)

Read this Patient Information carefully before you start taking rosuvastatin tablets and each time you get a refill.

If you have any questions about rosuvastatin tablets, ask your doctor. Only your doctor can determine if rosuvastatin tablets is right for you.

What is rosuvastatin tablets?

Rosuvastatin tablets is a prescription medicine that contains a cholesterol-lowering medicine called rosuvastatin.

- Rosuvastatin tablets is used to:
 - reduce the risk of stroke, heart attack, and the need for procedures to improve blood flow to the heart called arterial revascularization in adults who do not have known heart disease but do have certain additional risk factors.
- Rosuvastatin tablets is used along with diet to:
- lower the level of low-density lipoprotein (LDL) cholesterol or "bad" cholesterol in adults with primary hyperlipidemia.
- slow the buildup of fatty deposits (plaque) in the walls of blood vessels.
- treat adults and children 8 years of age and older with high blood cholesterol due to heterozygous familial hypercholesterolemia (an inherited condition that causes high levels of LDL).
- along with other cholesterol lowering treatments or alone if such treatments are unavailable in adults and children 7 years of age and older with homozygous familial hypercholesterolemia (an inherited condition that causes high levels of LDL).
- treat adults with a type of high cholesterol called primary dysbetalipoproteinemia (type III hyperlipoproteinemia).
- lower the level of fat in your blood (triglycerides) in adults with hypertriglyceridemia.

The safety and effectiveness of rosuvastatin tablets has not been established in children younger than 8 years of age with heterozygous familial hypercholesterolemia or children younger than 7 years of age with homozygous familial hypercholesterolemia or in children with other types of hyperlipidemias (other than HeFH or HoFH).

Who should not take rosuvastatin tablets?

Do not take rosuvastatin tablets if you:

- have liver problems.
- are allergic to rosuvastatin or any of the ingredients in rosuvastatin tablets. See the end of this leaflet for a complete list of ingredients in rosuvastatin tablets. Symptoms of allergic reactions include rash, itching, hives, and swelling.

What should I tell my doctor before and while taking rosuvastatin tablets?

Tell your doctor if you:

- have unexplained muscle aches or weakness.
- have or have had kidney problems.
- have or have had liver problems.
- drink more than 2 glasses of alcohol daily.
- have thyroid problems.
- are 65 years of age or older.
- are of Asian descent.
- are pregnant or think you may be pregnant, or are planning to become pregnant. If you become pregnant while taking rosuvastatin tablets, call your healthcare provider right away to discuss your rosuvastatin tablets treatment.
- are breastfeeding. Rosuvastatin tablets can pass into your breast milk. Breastfeeding is not recommended while taking rosuvastatin tablets.

Tell your doctor about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements.

Taking rosuvastatin tablets with certain other medicines may affect each other causing side effects. Rosuvastatin tablets may affect the way other medicines work, and other medicines may affect how rosuvastatin tablets works.

Especially tell your doctor if you take:

- cyclosporine (a medicine for your immune system)
- gemfibrozil (a fibric acid medicine for lowering cholesterol)
- fostamatinib (a medicine used to treat low platelet counts)
- febuxostat (a medicine used to treat and prevent high blood levels of uric acid)
- teriflunomide (a medicine used to treat relapsing remitting multiple sclerosis)
- capmatinib (a medicine for the treatment of non-small cell lung cancer)
- tafamidis (used to treat cardiomyopathy [enlarged and thickened heart muscle])
- darolutamide (a medicine for the treatment of prostate cancer)
- regorafenib (a medicine used to treat cancer of the colon and rectum)
- enasidenib (a medicine used to treat acute myeloid leukemia)
- anti-viral medicines including certain HIV or hepatitis C virus drugs such as:
 - o lopinavir, ritonavir, fosamprenavir, tipranavir, atazanavir, simeprevir
 - combination of
 - sofosbuvir/velpatasvir/voxilaprevir
 - dasabuvir/ombitasvir/paritaprevir/ritonavir
 - elbasvir/grazoprevir
 - sofosbuvir/velpatasvir
 - glecaprevir/pibrentasvir and

o all other combinations with ledipasvir including ledipasvir/sofosbuvir

- certain anti-fungal medicines (such as itraconazole, ketoconazole and fluconazole)
- coumarin anticoagulants (medicines that prevent blood clots, such as warfarin)
- niacin or nicotinic acid
- fibric acid derivatives (such as fenofibrate)
- colchicine (a medicine used to treat gout)

Ask your doctor or pharmacist for a list of these medicines if you are not sure. Know the medicines you take.

Keep a list of them to show your doctor and pharmacist when you get new medicine.

How should I take rosuvastatin tablets?

- Take rosuvastatin tablets exactly as your doctor tells you to take it.
- Take rosuvastatin tablets, by mouth, 1 time each day. Swallow the tablet whole.
- Rosuvastatin tablets can be taken at any time of day, with or without food.

- **Do not** change your dose or stop rosuvastatin tablets without talking to your doctor, even if you are feeling well.
- Your doctor may do blood tests to check your cholesterol levels before and during your treatment with rosuvastatin tablets. Your doctor may change your dose of rosuvastatin tablets if needed.
- Your doctor may start you on a cholesterol lowering diet before giving you rosuvastatin tablets. Stay on this diet when you take rosuvastatin tablets.
- Wait at least 2 hours after taking rosuvastatin tablets to take an antacid that contains a combination of aluminum and magnesium hydroxide.
- If you miss a dose of rosuvastatin tablets, take your next dose at your normal scheduled time. **Do not take** an extra dose of rosuvastatin tablets.
- If you take too much rosuvastatin tablets or overdose, call your doctor or go to the nearest hospital emergency room right away.

What are the possible side effects of rosuvastatin tablets?

Rosuvastatin tablets may cause serious side effects, including:

- Muscle pain, tenderness and weakness (myopathy). Muscle problems, including muscle breakdown, can be serious in some people and rarely cause kidney damage that can lead to death. Tell your doctor right away if:
- you have unexplained muscle pain, tenderness, or weakness, especially if you have a fever or feel more tired than usual, while you take rosuvastatin tablets.
- you have muscle problems that do not go away even after your doctor has told you to stop taking rosuvastatin tablets. Your doctor may do further tests to diagnose the cause of your muscle problems.

Your chances of getting muscle problems are higher if you:

- are taking certain other medicines while you take rosuvastatin tablets
- are 65 years of age or older
- have thyroid problems (hypothyroidism) that are not controlled
- have kidney problems
- are taking higher doses of rosuvastatin tablets
- **Liver problems**. Your doctor may do blood tests to check your liver before you start taking rosuvastatin tablets and if you have symptoms of liver problems while you take rosuvastatin tablets. Call your doctor right away if you have any of the following symptoms of liver problems:
- feel unusually tired or weak
- loss of appetite
- upper belly pain
- dark urine
- yellowing of your skin or the whites of your eyes
- **Protein and blood in the urine.** rosuvastatin tablets may cause you to have protein and blood in your urine. If you develop protein or blood in your urine, your doctor may decrease your dose of rosuvastatin tablets.
- Increase in blood sugar (glucose) levels. Rosuvastatin tablets may cause an increase in your blood sugar levels.

The most common side effects may include headache, muscle aches and pains, abdominal pain, weakness, and nausea.

Tell your doctor if you have any side effect that bothers you or that does not go away.

For more information, ask your doctor or pharmacist.

Call your doctor for medical advice about side effects. You may report side

effects to FDA at 1-800-FDA-1088.

How should I store rosuvastatin tablets?

- Store rosuvastatin tablets at room temperature, between 68°F to 77°F (20°C to 25°C) and in a dry place.
- Safely throw away medicine that is out of date or no longer needed.

Keep rosuvastatin tablets and all medicines out of the reach of children.

What are the Ingredients in rosuvastatin tablets?

Active Ingredient: rosuvastatin as rosuvastatin calcium

Inactive Ingredients: crospovidone, magnesium oxide, microcrystalline cellulose, lactose monohydrate, magnesium stearate, hypromellose, triacetin, iron oxide red, iron oxide yellow (5 mg), and titanium dioxide.

General Information about the safe and effective use of rosuvastatin tablets

Medicines are sometimes prescribed for purposes other than those listed in a Patient Information leaflet. Do not use rosuvastatin tablets for a condition for which it was not prescribed. Do not give rosuvastatin tablets to other people, even if they have the same medical condition you have. It may harm them.

You can ask your pharmacist or doctor for information about rosuvastatin tablets that is written for health professionals.

Manufactured by:

Alkem Laboratories Ltd., Mumbai - 400 013, INDIA.

Distributed by:

Ascend Laboratories, LLC Parsippany, NJ 07054

For more information call at 1-877-272-7901

This Patient Information has been approved by the U.S. Food and Drug Administration **Revised: October, 2023**

PT2180-09 / PT 2181-07

PACKAGE LABEL.PRINCIPAL DISPLAY PANEL

NDC No:67877-439-90 90 Tablets Rosuvastatin Tablets, USP 5 mg Rx only



NDC No:67877-439-05 500 Tablets Rosuvastatin Tablets, USP 5 mg Rx only



NDC No:67877-440-90 90 Tablets Rosuvastatin Tablets, USP 10 mg Rx only



NDC No:67877-441-05 500 Tablets Rosuvastatin Tablets, USP 20 mg Rx only



NDC No:67877-442-90 90 Tablets Rosuvastatin Tablets, USP 40 mg Rx only



ROSUVASTATIN CALCIUM

rosuvastatin calcium tablet, film coated

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:67877-439
Route of Administration	ORAL		

Active Ingredient/Active Moiety			
Ingredient Name	Basis of Strength	Strength	
ROSUVASTATIN CALCIUM (UNII: 83MVU38M7Q) (ROSUVASTATIN - UNII:413KH5Z173)	ROSUVASTATIN	5 mg	

Inactive Ingredients	
Ingredient Name	Strength
CROSPOVIDONE (120 .MU.M) (UNII: 68401960MK)	
MAGNESIUM OXIDE (UNII: 3A3U0GI71G)	
MICROCRYSTALLINE CELLULOSE (UNII: OP1R32D61U)	
LACTOSE MONOHYDRATE (UNII: EWQ57Q8I5X)	
MAGNESIUM STEARATE (UNII: 70097M6I30)	
HYPROMELLOSE, UNSPECIFIED (UNII: 3NXW29V3WO)	
TRIACETIN (UNII: XHX3C3X673)	
FERRIC OXIDE RED (UNII: 1K09F3G675)	
FERRIC OXIDE YELLOW (UNII: EX43802MRT)	
TITANIUM DIOXIDE (UNII: 15FIX9V2JP)	

Product Characteristics				
Color	YELLOW	Score	no score	
Shape	ROUND (Circular biconvex)	Size	6mm	
Flavor		Imprint Code	R;5	
Contains				

P	ackaging			
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:67877-439- 30	30 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017	
2	NDC:67877-439- 90	90 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017	
3	NDC:67877-439- 05	500 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017	
4	NDC:67877-439- 38	10 in 1 CARTON; Type 0: Not a Combination Product	03/21/2017	

Marketing Information				
Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date	
ANDA	ANDA206465	03/21/2017		

ROSUVASTATIN CALCIUM

rosuvastatin calcium tablet, film coated

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:67877-440
Route of Administration	ORAL		

Active Ingredient/Active Moiety			
Ingredient Name	Basis of Strength	Strength	
ROSUVASTATIN CALCIUM (UNII: 83MVU38M7Q) (ROSUVASTATIN - UNII:413KH5ZJ73)	ROSUVASTATIN	10 mg	

Inactive Ingredients	
Ingredient Name	Strength
CROSPOVIDONE (120 .MU.M) (UNII: 68401960MK)	
MAGNESIUM OXIDE (UNII: 3A3U0GI71G)	
MICROCRYSTALLINE CELLULOSE (UNII: OP1R32D61U)	
LACTOSE MONOHYDRATE (UNII: EWQ57Q8I5X)	
MAGNESIUM STEARATE (UNII: 70097M6I30)	
HYPROMELLOSE, UNSPECIFIED (UNII: 3NXW29V3WO)	
TRIACETIN (UNII: XHX3C3X673)	
FERRIC OXIDE RED (UNII: 1K09F3G675)	
TITANIUM DIOXIDE (UNII: 15FIX9V2JP)	

Product Characteristics

Color	PINK	Score	no score
Shape	ROUND (Circular biconvex)	Size	6mm
Flavor		Imprint Code	R;10
Contains			

P	Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date	
1	NDC:67877-440- 30	30 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017		
2	NDC:67877-440- 90	90 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017		
3	NDC:67877-440- 05	500 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017		
4	NDC:67877-440- 38	10 in 1 CARTON; Type 0: Not a Combination Product	03/21/2017		

Marketing Information				
Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date	
ANDA	ANDA206465	03/21/2017		

ROSUVASTATIN CALCIUM

rosuvastatin calcium tablet, film coated

Product Information				
Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:67877-441	
Route of Administration	ORAL			

Active Ingredient/Active Moiety Ingredient Name Basis of Strength ROSUVASTATIN CALCIUM (UNII: 83MVU38M7Q) (ROSUVASTATIN - UNII:413KH5ZJ73) ROSUVASTATIN 20 mg

Inactive Ingredients		
Ingredient Name	Strength	
CROSPOVIDONE (120 .MU.M) (UNII: 68401960MK)		
MAGNESIUM OXIDE (UNII: 3A3U0GI71G)		
MICROCRYSTALLINE CELLULOSE (UNII: OP1R32D61U)		
LACTOSE MONOHYDRATE (UNII: EWQ57Q8I5X)		
MAGNESIUM STEARATE (UNII: 70097M6I30)		
HYPROMELLOSE, UNSPECIFIED (UNII: 3NXW29V3WO)		
TRIACETIN (UNII: XHX3C3X673)		
FERRIC OXIDE RED (UNII: 1K09F3G675)		
TITANIUM DIOXIDE (UNII: 15FIX9V2JP)		

Product Characteristics				
Color	PINK	Score	no score	
Shape	ROUND (Circular biconvex)	Size	7mm	
Flavor		Imprint Code	R;20	

Contains

P	Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date	
1	NDC:67877-441- 30	30 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017		
2	NDC:67877-441- 90	90 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017		
3	NDC:67877-441- 05	500 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017		
4	NDC:67877-441- 38	10 in 1 CARTON; Type 0: Not a Combination Product	03/21/2017		

Marketing Information				
Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date	
ANDA	ANDA206465	03/21/2017		

ROSUVASTATIN CALCIUM

rosuvastatin calcium tablet, film coated

Product Information				
Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:67877-442	
Route of Administration	ORAL			

Active Ingredient/Active Moiety		
Ingredient Name	Basis of Strength	Strength
ROSUVASTATIN CALCIUM (UNII: 83MVU38M7Q) (ROSUVASTATIN - UNII:413KH5ZJ73)	ROSUVASTATIN	40 mg

Inactive Ingredients		
Ingredient Name	Strength	
CROSPOVIDONE (120 .MU.M) (UNII: 68401960MK)		
MAGNESIUM OXIDE (UNII: 3A3U0GI71G)		
MICROCRYSTALLINE CELLULOSE (UNII: OP1R32D61U)		
LACTOSE MONOHYDRATE (UNII: EWQ57Q8I5X)		
MAGNESIUM STEARATE (UNII: 70097M6I30)		
HYPROMELLOSE, UNSPECIFIED (UNII: 3NXW29V3WO)		
TRIACETIN (UNII: XHX3C3X673)		
FERRIC OXIDE RED (UNII: 1K09F3G675)		
TITANIUM DIOXIDE (UNII: 15FIX9V2JP)		

Product Characteristics			
Color	PINK	Score	no score
Shape	OVAL (oval shape,biconvex)	Size	12mm
Flavor		Imprint Code	R;40
Contains			

Item Code	Package Description	Marketing Start Date	Marketing End Date
	30 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017	
NDC:67877-442- 90	90 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017	
NDC:67877-442- 05	500 in 1 BOTTLE; Type 0: Not a Combination Product	03/21/2017	
NDC:67877-442- 38	10 in 1 CARTON; Type 0: Not a Combination Product	03/21/2017	
	IDC:67877-442- IDC:67877-442- IDC:67877-442- IDC:67877-442- IDC:67877-442-	IDC:67877-442- 30 in 1 BOTTLE; Type 0: Not a Combination Product IDC:67877-442- 90 in 1 BOTTLE; Type 0: Not a Combination Product IDC:67877-442- 500 in 1 BOTTLE; Type 0: Not a Combination Product IDC:67877-442- 10 in 1 CARTON; Type 0: Not a Combination	## Date ### Dat

Marketing Information					
Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date		
ANDA	ANDA206465	03/21/2017			

Labeler - Ascend Laboratories, LLC (141250469)

Establishment				
Name	Address	ID/FEI	Business Operations	
Alkem Laboratories Limited		915628612	MANUFACTURE(67877-439, 67877-440, 67877-441, 67877-442)	

Revised: 12/2023 Ascend Laboratories, LLC