

# Summary of Product Characteristics

## 1 NAME OF THE MEDICINAL PRODUCT

VASTAREL 35mg Modified-Release Tablets

## 2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each modified-release tablet contains 35 mg trimetazidine dihydrochloride.

For the full list of excipients, see section 6.1

## 3 PHARMACEUTICAL FORM

Modified-release tablet.

Pink round biconvex tablet.

## 4 CLINICAL PARTICULARS

### 4.1 Therapeutic Indications

Trimetazidine is indicated in adults as add-on therapy for the symptomatic treatment of patients with stable angina pectoris who are inadequately controlled by or intolerant to first-line antianginal therapies.

### 4.2 Posology and method of administration

Oral administration.

#### Posology

The dose is one tablet of 35mg of trimetazidine twice daily during meals.

#### Special populations

##### *Renal impairment*

In patients with moderate renal impairment (creatinine clearance [30-60] ml/min) (see sections 4.4 and 5.2), the recommended dose is 1 tablet of 35mg in the morning during breakfast.

##### *Elderly*

Elderly patients may have increased trimetazidine exposure due to age-related decrease in renal function (see section 5.2). In patients with moderate renal impairment (creatinine clearance [30-60] ml/min), the recommended dose is 1 tablet of 35mg in the morning during breakfast.

Dose titration in elderly patients should be exercised with caution (see section 4.4).

##### *Paediatric population:*

The safety and efficacy of trimetazidine in children aged below 18 years have not been established. No data are available.

### 4.3 Contraindications

-Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

-Parkinson disease, parkinsonian symptoms, tremors, restless leg syndrome, and other related movement disorders,

-Severe renal impairment (creatinine clearance < 30ml/min).

### 4.4 Special warnings and precautions for use

This product should be used with caution in patients who are predisposed to closed-angle glaucoma.

This medicine is not a curative treatment for angina attacks, nor is indicated as an initial treatment for unstable angina, or myocardial infarction, nor in the pre-hospital phase or during the first days of hospitalisation.

In the event of an angina attack, the coronaropathy should be re-evaluated and an adaptation of the treatment considered (medicinal treatment and possible revascularisation).

Trimetazidine can cause or worsen parkinsonian symptoms (tremor, akinesia, hypertonia), which should be regularly investigated, especially in elderly patients. In doubtful cases, patients should be referred to a neurologist for appropriate investigations.

The occurrence of movement disorders such as parkinsonian symptoms, restless leg syndrome, tremors, gait instability should lead to definitive withdrawal of trimetazidine.

These cases have a low incidence and are usually reversible after treatment discontinuation. The majority of the patients recovered within 4 months after trimetazidine withdrawal. If parkinsonian symptoms persist more than 4 months after drug discontinuation, a neurologist opinion should be sought.

Falls may occur, related to gait instability or hypotension, in particular in patients taking antihypertensive treatment (see section 4.8).

Caution should be exercised when prescribing trimetazidine to patients in whom an increased exposure is expected:

- moderate renal impairment (see sections 4.2 and 5.2),
- elderly patients older than 75 years old (see section 4.2)

Athletes:

This medicine contains an active substance which may give a positive reaction in doping tests.

#### 4.5 Interaction with other medicinal products and other forms of interactions

No drug interactions have been identified.

#### 4.6 Fertility, pregnancy and lactation

##### *Pregnancy*

There are no data from the use of trimetazidine in pregnant women. Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity (see section 5.3). As a precautionary measure, it is preferable to avoid the use of Vastarel during pregnancy.

##### *Breastfeeding*

It is unknown whether trimetazidine/metabolites are excreted in human milk. A risk to the newborns/infants cannot be excluded. Vastarel should not be used during breast-feeding.

##### *Fertility*

Reproductive toxicity studies have shown no effect on fertility in female and male rates (see section 5.3).

#### 4.7 Effects on ability to drive and use machines

Trimetazidine does not have haemodynamic effects in clinical studies, however cases of dizziness and drowsiness have been observed in post-marketing experience (see section 4.8), which may affect ability to drive and use machines.

#### 4.8 Undesirable effects

Tabulated list of adverse reactions

Trimetazidine may cause the following undesirable effects ranked under the following frequency:

Very common ( $\geq 1/10$ ); common ( $\geq 1/100$  to  $< 1/10$ ); uncommon ( $\geq 1/1000$  to  $< 1/100$ ); rare ( $\geq 1/10000$  to  $< 1/1000$ ); very rare ( $< 1/10000$ ), not known (cannot be estimated from the available data) .

System Organ Class	Frequency	Preferred Term
Nervous system disorders	Common	Dizziness, headache
	Not known	Parkinsonian symptoms (tremor, akinesia, hypertonia), gait

		instability, restlessleg syndrome, other related movement disorders, usually reversible after treatment discontinuation
	Not known	Sleep disorders (insomnia, drowsiness)
Ear and labyrinth disorders	Not known	Vertigo
Cardiac disorders	Rare	Palpitations, extrasystoles, tachycardia
Vascular disorders	Rare	Arterial Hypotension , Orthostatic hypotension that may be associated with malaise, dizziness or fall, in particular in patients taking antihypertensive treatment, flushing
Gastrointestinal disorders	Common	Abdominal pain, diarrhoea, dyspepsia, nausea and vomiting
	Not known	Constipation
Skin and subcutaneous tissue disorders	Common	Rash, pruritus, urticaria.
	Not known	Acute generalized exanthematus pustulosis (AGEP), angioedema
General disorders and administration conditions	Common	Asthenia
Blood and lymphatic system disorders	Not known	Agranulocytosis Thrombocytopenia Thrombocytopenic purpura
Hepatobiliary disorders	Not known	Hepatitis

#### Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via:

HPRa Pharmacovigilance .

Website: [www.hpra.ie](http://www.hpra.ie)..

#### **4.9 Overdose**

Limited information is available on Trimetazidine overdose. Treatment should be symptomatic.

### **5 PHARMACOLOGICAL PROPERTIES**

#### **5.1 Pharmacodynamic properties**

Pharmacotherapeutic group: Other cardiovascular antianginal drug.

ATC code: C01E B15 (C: cardiovascular system)

Mechanism of action

By preserving energy metabolism in cells exposed to hypoxia or ischaemia, trimetazidine prevents a decrease in intracellular ATP levels, thereby ensuring the proper functioning of ionic pumps and transmembrane sodium-potassium flow whilst maintaining cellular homeostasis.

Trimetazidine inhibits  $\beta$ -oxidation of fatty acids by blocking long-chain 3-ketoacyl-CoA thiolase, which enhances glucose oxidation. In an ischaemic cell, energy obtained during glucose oxidation requires less oxygen consumption than in the  $\beta$ -oxidation process. Potentiation of glucose oxidation optimizes cellular energy processes, thereby maintaining proper energy metabolism during ischaemia.

Pharmacodynamic effects

In patients with ischaemic heart disease, trimetazidine acts as a metabolic agent, preserving the myocardial high-energy phosphate intracellular levels. Anti-ischemic effects are achieved without concomitant haemodynamic effects.

Clinical efficacy and safety

Clinical studies have demonstrated the efficacy and safety of trimetazidine in the treatment of patients with chronic angina, either alone or when the benefit from other antianginal medicinal products was insufficient.

In a 426-patients randomized, double blind, placebo-controlled study (TRIMPOL-II), trimetazidine (60mg/day) added to metoprolol 100mg daily (50 mg b.i.d) for 12 weeks significantly improved statistically exercise tests parameters and clinical symptoms as compared to placebo: total exercise duration +20.1s,  $p=0.023$ , total workload +0.54 METs,  $p=0.001$ , time to 1-mm ST-segment depression +33.4s,  $p=0.003$ , time to onset of angina +33.9s,  $p<0.001$ , angina attacks/week -0.73,  $p=0.014$  and short acting nitrates consumption/week, -0.63,  $p=0.032$ , without hemodynamic changes.

In a 223 patients randomized, double blind, placebo-controlled study (Sellier), one 35 mg trimetazidine modified release tablet (b.i.d.) added to 50 mg atenolol (o.d.) for 8 weeks produced a significant increase (+34.4s,  $p=0.03$ ) in the time to 1-mm ST-segment depression in exercise tests, in a sub-group of patients ( $n=173$ ), when compared to placebo, 12 hours after taking the drug. A significant difference was also evidenced for the time to onset of angina pectoris ( $p=0.049$ ). No significant difference between groups could be found for the other secondary endpoints (total exercise duration, total workload and clinical endpoints).

In a 1962 patients three-month randomised, double-blinded study (Vasco study) on top of atenolol 50 mg/d, two dosages of trimetazidine (70 mg/d and 140 mg/d) were tested versus placebo. In the overall population, including both asymptomatic and symptomatic patients, trimetazidine failed to demonstrate a benefit on both ergometric (total exercise duration, time to onset of 1mm ST and time to onset angina) and clinical endpoints. However, in the subgroup of symptomatic patients ( $n=1574$ ) defined in a post-hoc analysis, trimetazidine (140 mg) significantly improved total exercise duration (+23.8 s versus +13.1 s placebo;  $p=0.001$ ) and time to onset of angina (+46.3 s versus +32.5 s placebo;  $p=0.005$ ).

**5.2 Pharmacokinetic properties**Absorption

After oral administration, maximum concentration is found, on average, 5 hours after taking the tablet. Over 24 hours the plasma concentration remains at levels above or equal to 75% of the maximum concentration for 11 hours. Steady state is reached by the 60th hour, at the latest.

The pharmacokinetic characteristics of VASTAREL 35mg Modified-Release Tablets are not influenced by meals.

Distribution

The apparent distribution volume is 4.8 l/kg; protein binding is low: in vitro measurements give value of 16%.

Elimination

Trimetazidine is eliminated primarily in the urine, mainly in the unchanged form.

The elimination half-life of VASTAREL 35mg Modified-Release Tablets is an average of 7 hours in healthy young volunteers and 12 hours in subjects aged more than 65 years. Total clearance of trimetazidine is the result of major renal clearance which is directly correlated to creatinine clearance and, to a lesser extent, to liver clearance which is reduced with age.

**Special Populations**

### *Elderly*

The elderly may have increased trimetazidine exposure due to age-related decrease in renal function. A dedicated pharmacokinetic study performed in elderly (75-84 years) or very elderly ( $\geq 85$  years) participants showed that moderate renal impairment (creatinine clearance between 30 and 60 ml/min) increased respectively by 1.0 and 1.3 fold the Trimetazidine exposure in comparison to younger participants (30-65 years) with moderate renal impairment (see section 4.2).

A specific clinical study carried out in an elderly population (older than 75 years old) using a dosage of 2 tablets of trimetazidine MR 35mg per day taken in 2 doses, analysed by a kinetic population method, showed on average a 2-fold increase in plasma exposure in patients with severe renal impairment (creatinine clearance below 30ml/min) as compared to those with a creatinine clearance above 60 ml/min.

No safety concern was observed in the elderly population as compared to the general population.

### *Renal Impairment*

Trimetazidine exposure is increased on average by 1.7-fold in patients with moderate renal impairment (creatinine clearance between 30 and 60 ml/min), and on average by 3.1-fold in patients with severe renal impairment (creatinine clearance below 30ml/min) as compared to healthy volunteers, with normal renal function (see sections 4.2 and 4.3).

No safety concern was observed in this population as compared to the general population.

### *Paediatric population*

The pharmacokinetics of trimetazidine have not been studied in the paediatric population (<18 years old).

## **5.3 Preclinical safety data**

Chronic toxicity studies conducted by the oral route in dogs (5 to 40 mg.kg<sup>-1</sup>.d<sup>-1</sup>) and rats (5 to 200 mg.kg<sup>-1</sup>.d<sup>-1</sup>), showed a good safety profile. Neither embryo-foetotoxic effects nor teratogenicity were detected in mice and in rabbits. The general study on reproduction and embryogenesis in 3 generations of rats showed no anomalies. The genotoxic potential was thoroughly assessed with three in vitro studies including the evaluation of the mutagenic and clastogenic potential and one in vivo study. All tests were negative.

## **6 PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Tablet core:

Calcium hydrogen phosphate dihydrate;

Hypromellose 4000;

Povidone;

Anhydrous colloidal silica,

Magnesium stearate.

Film-coating:

Macrogol 6000

Titanium dioxide (E171)

Glycerol

Hypromellose

Red iron oxide (E172)

Magnesium stearate.

### **6.2 Incompatibilities**

Not applicable.

### **6.3 Shelf life**

3 years.

### **6.4 Special precautions for storage**

This medicinal product does not require any special storage conditions.

#### **6.5 Nature and contents of container**

Cartons of 10, 30, 60 and 90 tablets in PVC/Aluminium blisters.  
Not all of these pack sizes may be marketed.

#### **6.6 Special precautions for disposal**

No special requirements.

#### **7 MARKETING AUTHORISATION HOLDER**

Les Laboratoires Servier  
50, rue Carnot  
92284 Suresnes Cedex  
France

#### **8 MARKETING AUTHORISATION NUMBER**

PA0568/033/002

#### **9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

Date of first authorisation: 04 November 2005

Date of last renewal: 04 November 2010

#### **10 DATE OF REVISION OF THE TEXT**

February 2021