

For the use only of a Registered Medical Practitioner or a Hospital or a Laboratory

This package insert is continually updated: Please read carefully before using a new pack

CARDACE® am

Ramipril and Amlodipine Tablets

Cardace® am 10

Each uncoated tablet contains:

Ramipril IP.... 10.0 mg

Amlodipine Besylate IP equivalent to Amlodipine.....5.0 mg

Cardace® am 5

Each uncoated tablet contains:

Ramipril IP.... 5.0 mg

Amlodipine Besylate IP equivalent to Amlodipine.....5.0 mg

Cardace® am 2.5

Each uncoated tablet contains:

Ramipril IP.... 2.5 mg

Amlodipine Besylate IP equivalent to Amlodipine.....5.0 mg

THERAPEUTIC INDICATIONS

Indicated for the treatment of hypertension.

PHARMACOLOGICAL INFORMATION:

Ramipril

Ramiprilat, the active metabolite of the prodrug ramipril, inhibits the enzyme dipeptidylcarboxypeptidase I (synonyms: angiotensin-converting enzyme; kininase II). In plasma and tissue this enzyme catalyses the conversion of angiotensin I to the active vasoconstrictor substance angiotensin II, as well as the breakdown of the active vasodilator bradykinin. Reduced angiotensin II formation and inhibition of bradykinin breakdown lead to vasodilatation.

Since angiotensin II also stimulates the release of aldosterone, ramiprilat causes a reduction in aldosterone secretion. The increase in bradykinin activity probably contributes to the cardioprotective and endothelioprotective effects observed in animal experiments. It has not yet been established to what extent this is also responsible for certain unwanted effects (e.g. tickling cough).

ACE inhibitors are effective even in patients with low-renin hypertension. The average response to ACE inhibitor monotherapy was lower in black (Afro-Caribbean) hypertensive patients (usually a low-renin hypertensive population) than in non-black patients.

Amlodipine

Amlodipine is a dihydropyridine calcium channel blocker. It inhibits the transmembrane influx of calcium ions into cardiac and vascular smooth muscle without affecting serum calcium concentrations. Direct relaxation of vascular smooth muscle forms the basis of the antihypertensive action.

DOSAGE & ADMINISTRATION

The dosage is based on the desired effect and on how the individual patient tolerates the drug.

Recommended initial dose is one tablet of Cardace® am 2.5mg/5mg once daily. Depending on patient's response the dose may be increased. Cardace® am 5mg/5mg or Cardace® am 10mg/5mg may be used for higher dosing. It is recommended that the dose if increased should be done at intervals of 2 or 3 weeks.

Maximum permitted daily dose of ramipril is 10mg and the maximum recommended daily dose of Amlodipine is up to 10mg.

Cardace® am has to be swallowed with sufficient amount of liquid (approx. ½ glass). The tablet must not be chewed or crushed.

CONTRAINDICATIONS

Cardace® am must not be used

Related to both ramipril and amlodipine

- in patients with hypersensitivity to ramipril, amlodipine, other ACE inhibitors, dihydropyridine derivatives or to any of the excipients

Related to ramipril

- in patients with a history of angioedema.
- concomitantly with sacubitril/valsartan therapy (see Section Interactions). Do not initiate Cardace® am until sacubitril/valsartan is eliminated from the body. In case of switch from Cardace® am to sacubitril/valsartan, do not start sacubitril/valsartan until Cardace® am is eliminated from the body
- in patients with hemodynamically relevant renal artery stenosis, bilateral or unilateral in the single kidney.
- in patients with hypotensive or hemodynamically unstable states.
- with aliskiren-containing medicines in patients with diabetes or with moderate to severe renal impairment (creatinine clearance <60 mL/min).
- with angiotensin II receptor antagonists (AIIRAs) in patients with diabetic nephropathy.
- during pregnancy.

Concomitant use of ACE inhibitors and extracorporeal treatments leading to contact of blood with negatively charged surfaces must be avoided, since such use may lead to severe anaphylactoid reactions. Such extracorporeal treatments include dialysis or hemofiltration with certain high-flux (e.g. polyacrylonitril) membranes and low-density lipoprotein apheresis with dextran sulfate.

Related to amlodipine

- in patients with severe hypotension
- in patients with shock (including cardiogenic shock)
- in patients with obstruction of the outflow tract of the left ventricle (e.g. high grade aortic stenosis)
- in patients with hemodynamically unstable heart failure after acute myocardial infarction

WARNINGS

Related to Ramipril

- Angioedema - Head, Neck or Extremities

Angioedema can occur immediately after starting treatment with an ACE inhibitor, however severe angioedema may also occur at any time during long-term treatment with an ACE inhibitor. In case of angioedema, Cardace® am must be discontinued immediately

- **Angioedema of the face, extremities, lips, tongue, glottis or larynx has been reported in patients treated with ACE inhibitors.**

Emergency treatment of life-threatening angioedema includes immediate administration of epinephrine (subcutaneous or slow intravenous injection) accompanied by monitoring of ECG and blood pressure. Healthcare professionals should review the response to treatment noting standard therapies for histamine-mediated angioedema may be ineffective for bradykinin-mediated angioedema. Hospitalization of the patient is advisable with observation for at least 12 to 24 hours and discharge only upon complete resolution of the symptoms.

- **Angioedema –Intestinal**

Intestinal angioedema has been reported in patients treated with ACE inhibitors. These patients presented with abdominal pain (with or without nausea or vomiting); in some cases facial angioedema also occurred. The intestinal angioedema symptoms resolved after stopping the ACE inhibitor.

- **Desensitization therapy**

The likelihood and severity of anaphylactic and anaphylactoid reactions to insect venoma is increased under ACE inhibition. It is assumed that this effect may also occur in connection with other allergens.

Insufficient experience has been gained concerning the use of ramipril in children, in patients with severe impairment of renal function (creatinine clearance below 20 mL/min per 1.73 m² body surface area), and in dialysis patients.

An increased risk of angioedema is possible with concomitant use of other drugs which may cause angioedema (see Section Contraindications and Section Interactions).

Related to amlodipine

The safety and efficacy of amlodipine in hypertensive crisis has not been established.

- **Renal impairment**

Amlodipine may be used in such patients at normal doses. Changes in amlodipine plasma concentrations are not correlated with degree of renal impairment. Amlodipine is not dialyzable.

- **Hepatic impairment**

The half-life of amlodipine is prolonged and AUC values are higher in patients with impaired liver function; dosage recommendations have not been established. Amlodipine should therefore be initiated at the lower end of the dosing range and caution should be used, both on initial treatment and when increasing the dose. Slow dose titration and careful monitoring may be required in patients with severe hepatic impairment.

- **Cardiac failure**

Patients with heart failure should be treated with caution. In a long-term, placebo controlled study in patients with severe heart failure (NYHA class III and IV) the reported incidence of pulmonary oedema was higher in the amlodipine treated group than in the placebo group. **Calcium channel blockers, including amlodipine, should be used with caution in patients with congestive heart failure, as they may increase the risk of future cardiovascular events and mortality.**

PRECAUTIONS

Related to both ramipril and amlodipine

Caution is recommended in patients who are being treated concurrently with diuretics since these patients may be volume and/or salt depleted. Renal function and serum potassium should be monitored.

Related to ramipril

- **Dual blockade of the renin-angiotensin-aldosterone system (RAAS)**

Dual blockade of the renin-angiotensin-aldosterone system by combining ramipril am with an angiotensin-II receptor antagonist (AIIRA) or with aliskiren is not recommended since there are increased risk of hypotension, hyperkalemia and changes in renal function compared to monotherapy.

If dual blockade therapy is considered absolutely necessary, this should only occur under specialist supervision and subject to frequent close monitoring of renal function, electrolytes and blood pressure.

- **Patients with hyper-stimulated renin angiotensin system**

In the treatment of patients with a hyper-stimulated renin-angiotensin system, particular caution must be exercised (see also under Dosage and Administration). Such patients are at risk of an acute pronounced fall in blood pressure and deterioration of renal function due to ACE inhibition, especially when an ACE inhibitor or a concomitant diuretic is given for the first time or for the first time at an increased dose. Initial dose or initial dose increases must be accompanied by close blood pressure monitoring until such time as no further acute reduction in blood pressure is anticipated.

Significant activation of the renin angiotensin system is to be anticipated, for example:

- **in patients with severe**, and particularly with malignant hypertension. The initial phase of treatment requires special medical supervision.
- **in patients with heart failure**, particularly if severe or if treated with other substances having antihypertensive potential. If heart failure is severe, the initial phase of treatment requires special medical supervision.
- **in patients with hemodynamically relevant left-ventricular inflow or outflow impediment** (e.g., stenosis of the aortic or mitral valve). The initial phase of treatment requires special medical supervision.
- **in patients with hemodynamically relevant renal artery stenosis**. The initial phase of treatment requires special medical supervision. **Discontinuation of diuretic therapy may be required**. See also under 'Monitoring of renal function' below.
- **in patients pre-treated with diuretics**. Where discontinuing use or reducing the dose of the diuretic is not possible the initial phase of treatment requires special medical supervision.
- **in patients in whom fluid or salt depletion exist or may develop** (as a result of insufficient fluid or salt intake, or as a result of, e.g., diarrhea, vomiting or excessive sweating in cases where salt and fluid replacement is inadequate).
- in patients undergoing major surgery or during anesthesia with agents that produce hypotension

Generally, it is recommended that dehydration, hypovolemia or salt depletion be corrected before initiating treatment (in patients with heart failure, however, such corrective action must be carefully weighed against the risk of volume overload). When these conditions have become clinically relevant, treatment with Cardace® am must only be started or continued if appropriate steps are taken concurrently to prevent an excessive fall in blood pressure and deterioration of renal function.

See also under "Patients with liver disease".

- **Patients with liver diseases**

In patients with impaired liver function, response to the treatment with ramipril am may be either increased or reduced. In addition, in patients in whom severe liver cirrhosis with oedema and/or ascites is present, the renin angiotensin system may be significantly activated; therefore, particular caution must be exercised in treating these patients.

- **Patients at particular risk from a pronounced reduction in blood pressure**

In patients who would be at particular risk from an undesirably pronounced reduction in blood pressure (e.g. patients with hemodynamically relevant stenoses of the coronary arteries or of the blood vessels supplying the brain), the initial phase of treatment requires special medical supervision.

- **Elderly**

Some elderly patients may be particularly responsive to ACE inhibitors. Evaluation of renal function at the beginning of treatment is recommended (see also under Dosage and Administration).

- **Monitoring of renal function**

It is recommended that renal function be monitored, particularly in the initial weeks of treatment with an ACE inhibitor. Particularly careful monitoring is required in patients with

- heart failure
- renovascular disease, including patients with hemodynamically relevant unilateral renal artery stenosis. In the later patient group, even a small increase in serum creatinine may be indicative of unilateral loss of renal function.
- impairment of renal function
- kidney transplant

- **Electrolyte monitoring**

It is recommended that serum potassium and serum sodium be monitored regularly. More frequent monitoring of serum potassium is necessary in patients with impaired renal function.

- **Hematological monitoring**

It is recommended that the white blood cell count be monitored to permit detection of a possible leucopenia. More frequent monitoring is advised in the initial phase of treatment and in patients with impaired renal function, those with concomitant collagen disease (e.g. lupus erythematosus or scleroderma) or those treated with other drugs that can cause changes in the blood picture.

- **Surgery**

It is recommended that treatment with angiotensin converting enzyme inhibitors such as ramipril should be discontinued where possible one day before surgery.

Related to amlodipine

- **Elderly**

In the elderly increase of the dosage should take place with care.

INTERACTIONS

Related to ramipril

Food interactions

Absorption of ramipril is not significantly affected by food.

Drug interactions

Contra-indicated combinations

The concomitant use of ACE inhibitors with sacubitril/valsartan is contraindicated as this increases the risk of angioedema (see Section Warnings).

Extracorporeal treatments leading to contact of blood with negatively charged surfaces such as dialysis or hemofiltration with certain high-flux membranes (e.g. polyacrylonitril membranes) and low-density lipoprotein apheresis with dextran sulfate: Risk of severe anaphylactoid reactions. (see Section Contraindications)

The combination of ramipril with aliskiren-containing medicines is contraindicated in patients with diabetes mellitus or moderate to severe renal impairment (creatinine clearance < 60 mL/min) and is not recommended in other patients (see Contraindications and Precautions).

***Angiotensin-II Receptor Antagonists (AIIRAs):*. The use of Cardace[®] am in combination with an AIIRA is contraindicated in patients with diabetic nephropathy and is not recommended in other patients (see section Contraindication and Precautions)**

Not recommended associations

Potassium salts, potassium-retaining diuretics or other medicinal products that may increase kalemia: Rise in serum potassium concentration, sometimes severe, is to be anticipated. Concomitant treatment with potassium-retaining diuretics (e.g. spironolactone), potassium salts or other medicinal products that may increase kalemia requires close monitoring of serum potassium.

Precautions for use

Antihypertensive Agents (e.g. Diuretics) and other substances with Antihypertensive Potential (e.g. Nitrates, Tricyclic Antidepressants, Anesthetics): Potentiation of the antihypertensive effect is to be anticipated. Regular monitoring of serum sodium is recommended in patients undergoing concurrent diuretic therapy.

Vasopressor Sympathomimetics: These may reduce the antihypertensive effect of ramipril. Particularly close blood pressure monitoring is recommended.

Allopurinol, Immunosuppressants, Corticosteroids, Procainamide, Cytostatics and other substances that may change the blood picture: Increased likelihood of hematological reactions (See also under section Precautions).

Lithium Salts: Excretion of lithium may be reduced by ACE inhibitors. Such reduction may lead to increased serum lithium levels and increased lithium toxicity. Lithium levels must, therefore, be monitored.

Antidiabetic agents (e.g. insulin and sulfonylurea derivatives): ACE inhibitors may reduce insulin resistance. In isolated cases, such reduction may lead to hypoglycemic reactions in patients concomitantly treated with antidiabetics. Particularly close blood glucose monitoring is, therefore, recommended in the initial phase of co-administration.

Vildagliptin: An increased incidence of angioedema was found in patients taking ACE Inhibitors and vildagliptin.

mTOR Inhibitors (e.g. temsirolimus): An increased incidence of angioedema was observed in patients taking ACE Inhibitors and mTOR Inhibitors (mammalian target of rapamycin inhibitors).

Neprilysin (NEP) inhibitors: An increased risk of angioedema has been reported with concomitant use of ACE inhibitors and NEP inhibitors (such as racecadotril) (see Section Warning)

Take into account

Nonsteroidal anti-inflammatory drugs (e.g. indomethacin) and acetylsalicylic acid: Attenuation of the antihypertensive effect of Cardace[®] am is to be anticipated. Furthermore, concomitant treatment of ACE inhibitors and NSAIDs may lead to an increased risk of worsening of renal function and an increase in serum potassium.

HEPARIN: Rise in serum potassium concentration possible.

ALCOHOL: Increased vasodilatation. Ramipril may potentiate the effect of alcohol.

SALT: Increased dietary salt intake may attenuate the antihypertensive effect of ramipril

Related to amlodipine

Effects of other medicinal products on amlodipine

CYP3A4 inhibitors: Concomitant use of amlodipine with strong or moderate CYP3A4 inhibitors (protease inhibitors, azole antifungals, macrolides like erythromycin or clarithromycin, verapamil or diltiazem) may give rise to significant increase in amlodipine exposure resulting in an increased risk of hypotension. The clinical translation of these PK variations may be more pronounced in the elderly. Close clinical observation of patients is recommended and dose adjustment may thus be required.

CYP3A4 inducers:

Upon co-administration of known inducers of the CYP3A4, the plasma concentration of amlodipine may vary. Therefore, **blood pressure should be monitored and dose adjustment considered both during and after concomitant medication particularly with strong CYP3A4 inducers** (e.g. rifampicin, hypericum perforatum).

Dantrolene (infusion): In animals, lethal ventricular fibrillation and cardiovascular collapse are observed in association with hyperkalemia after administration of verapamil and intravenous dantrolene. **Due to risk of hyperkalemia, it is recommended that the co-administration of calcium channel blockers such as amlodipine be avoided in patients susceptible to malignant hyperthermia and in the management of malignant hyperthermia.**

Effects of amlodipine on other medicinal products

The blood pressure lowering effects of amlodipine adds to the blood pressure-lowering effects of other medicinal products with antihypertensive properties.

Tacrolimus: There is a risk of increased tacrolimus blood levels when co-administered with amlodipine. **In order to avoid toxicity of tacrolimus, administration of amlodipine in a patient treated with tacrolimus requires monitoring of tacrolimus blood levels and dose adjustment of tacrolimus when appropriate.**

Cyclosporine: No drug interaction studies have been conducted with cyclosporine and amlodipine in healthy volunteers or other populations with the exception of renal transplant patients, where variable trough concentration increases (average 0 – 40%) of cyclosporine were observed. **Consideration should be given for monitoring cyclosporine levels in renal transplant patients on amlodipine, and cyclosporine dose reductions should be made as necessary.**

Simvastatin: Co-administration of multiple doses of 10 mg of amlodipine with 80 mg simvastatin resulted in a 77% increase in exposure to simvastatin compared to simvastatin alone. **Limit the dose of simvastatin in patients on amlodipine to 20 mg daily.**

In clinical interaction studies, amlodipine did not affect the pharmacokinetics of atorvastatin, digoxin or warfarin.

REPRODUCTION

PREGNANCY

Related to ramipril

Cardace® am must not be taken during pregnancy (See section Contraindications). Therefore, **pregnancy must be excluded before starting treatment. Pregnancy must be avoided in cases where treatment with ACE inhibitors is indispensable.**

If the patient intends to become pregnant, treatment with ACE inhibitors must be discontinued, i.e. replaced by another form of treatment.

If the patient becomes pregnant during treatment, medication with Cardace® am must be replaced as soon as possible by a treatment regimen without ACE inhibitors. Otherwise there is a risk of harm to the fetus.

When ACE inhibitors have been administered to women in the second and third trimester of pregnancy, there have been reports of harmful effects on the fetus and newborn child, including sometimes in conjunction with oligohydramnios (presumably as an expression of impaired fetal renal function) - craniofacial deformities, pulmonary hypoplasias, fetal limb contractures, hypotension, anuria, reversible and irreversible renal failure as well as death. Prematurity, intrauterine growth retardation and persistence of Botallo's duct have also been reported in humans, although it is uncertain whether these phenomena are a consequence of exposure to ACE inhibitors.

Related to amlodipine

The safety of amlodipine in human pregnancy has not been established.
In animal studies, reproductive toxicity was observed at high doses.

Fertility:

Reversible biochemical changes in the head of spermatozoa have been reported in some patients treated by calcium channel blockers. **Clinical data are insufficient regarding the potential effect of amlodipine on fertility.** In one rat study, adverse effects were found on male fertility.

LACTATION

Related to both ramipril and amlodipine

Cardace® am is not recommended during lactation.

Related to ramipril

Because insufficient information is available regarding the use of ramipril during breast feeding, it is not recommended and alternative treatment with better established safety profiles during breastfeeding are preferable, especially while nursing a newborn or preterm infant.

Related to amlodipine

Amlodipine is excreted in human milk. The proportion of the maternal dose received by the infant has been estimated with an interquartile range of 3 – 7%, with a maximum of 15%. The effect of amlodipine on infants is unknown.

DRIVING A VEHICLE OR PERFORMING OTHER HAZARDOUS TASKS

Related to ramipril

Some adverse effects (e.g. some symptoms of a reduction in blood pressure such as lightheadedness, dizziness), may impair the patient's ability to concentrate and react and therefore constitute a risk in situations where these abilities are of particular importance (e.g. operating a vehicle or machinery).

Related to amlodipine

Amlodipine can have minor or moderate influence on the ability to drive and use machines. If patients taking amlodipine suffer from dizziness, headache, fatigue or nausea the ability to react may be impaired. **Caution is recommended especially at the start of treatment.**

OVERDOSAGE

SIGNS AND SYMPTOMS

Related to ramipril

Overdosage may **cause excessive peripheral vasodilatation** (with marked hypotension, shock), **bradycardia, electrolyte disturbances, and renal failure.**

Related to amlodipine

Available data suggest that gross overdosage could result in excessive peripheral vasodilatation and possibly reflex tachycardia. Marked and probably prolonged systemic hypotension up to and including shock with fatal outcome have been reported.

Non-cardiogenic pulmonary oedema has rarely been reported as a consequence of amlodipine overdose that may manifest with a delayed onset (24-48 hours post-ingestion) and require ventilatory support. Early resuscitative measures (including fluid overload) to maintain perfusion and cardiac output may be precipitating factors .

MANAGEMENT

Related to ramipril

Primary detoxification by, for example, gastric lavage, administration of adsorbents, sodium sulfate; (if possible during the first 30 minutes). **In the event of hypotension administration of α 1-adrenergic agonists** (e.g. norepinephrine, dopamine) **or angiotensin II (angiotensinamide)**, which is usually available only in scattered research laboratories, **must be considered in addition to volume and salt substitution.**

No experience is available concerning the efficacy of forced diuresis, alteration in urine pH, hemofiltration, or dialysis in speeding up the elimination of ramipril or ramiprilat. If dialysis or hemofiltration is nevertheless considered. (See Section Contraindications)

Related to amlodipine

Clinically significant hypotension due to amlodipine overdosage calls for active cardiovascular support including frequent monitoring of cardiac and respiratory function, elevation of extremities and attention to circulating fluid volume and urine output.

A vasoconstrictor may be helpful in restoring vascular tone and blood pressure, provided that there is no contraindication to its use. Intravenous calcium gluconate may be beneficial in reversing the effects of calcium channel blockade.

Gastric lavage may be worthwhile in some cases. In healthy volunteers the use of charcoal up to 2 hours after administration of amlodipine 10 mg has been shown to reduce the absorption rate of amlodipine. Since amlodipine is highly protein-bound, dialysis is not likely to be of benefit.

ADVERSE REACTIONS:

The following CIOMS frequency rating is used, when applicable:

Very common $\geq 10\%$; Common ≥ 1 and $<10\%$; Uncommon ≥ 0.1 and $<1\%$;

Rare ≥ 0.01 and $<0.1\%$; Very rare $<0.01\%$; Not known (cannot be estimated from available data).

System organ class	Frequency	Ramipril	Amlodipine
Blood and lymphatic system disorders	Uncommon	Eosinophilia	
	Rare	White blood cell count decreased (including neutropenia or agranulocytosis), red blood cell count decreased, hemoglobin decreased, platelet count decreased	
	Very rare		Leukocytopenia, thrombocytopenia
	Not known	Bone marrow failure, pancytopenia, hemolytic anemia	
Immune system disorders	Very rare		Allergic reactions
	Not known	Anaphylactic or anaphylactoid reactions (severe anaphylactic and anaphylactoid reactions to insect venom is increased under ACE inhibition), antinuclear antibody increased	
Endocrine disorders	Not known	Syndrome of inappropriate antidiuretic hormone secretion (SIADH)	
Metabolism and nutrition disorders	Common	Blood potassium increased	
	Uncommon	Anorexia, decreased appetite	
	Very rare		Hyperglycemia
	Not known	Blood sodium decreased	
Psychiatric disorders	Uncommon	Depressed mood, anxiety, nervousness, restlessness, sleep disorder including somnolence	Insomnia, mood changes (including anxiety), depression
	Rare	Confusional state	Confusion
	Not known	Disturbance in attention	

Nervous system disorders	Common	Headache, dizziness (lightheadedness)	Somnolence, dizziness, headache (especially at the beginning of the treatment)
	Uncommon	Vertigo, paresthesia, ageusia (loss of taste), dysgeusia (taste disturbances)	Tremor, dysgeusia, syncope, hypoesthesia, paresthesia
	Rare	Tremor, balance disorder	
	Very rare		Hypertonia peripheral neuropathy
	Not known	Cerebral ischemia including ischemic stroke and transient ischemic attack, psychomotor skills impaired (impaired reactions), burning sensation, parosmia (smell disturbances)	Extrapyramidal disorder
Eye disorders	Common		Visual disturbance (including diplopia)
	Uncommon	Visual disturbance including blurred vision	
	Rare	Conjunctivitis	
Ear and labyrinth disorders	Uncommon		Tinnitus
	Rare	Hearing impaired, tinnitus	
Cardiac disorders	Common		Palpitations
	Uncommon	Myocardial ischemia including angina pectoris or myocardial infarction, tachycardia, arrhythmia, palpitations, oedema peripheral	Arrhythmia , (including bradycardia, ventricular tachycardia and atrial fibrillation)
	Very rare		Myocardial infarction
Vascular disorders	Common	Hypotension, orthostatic blood pressure decreased (disturbed orthostatic regulation), syncope	Flushing
	Uncommon	Flushing	Hypotension
	Rare	Vascular stenosis, hypoperfusion exacerbation of	

		perfusion disturbances, vasculitis	
	Very rare		Vasculitis
	Not known	Raynaud's phenomenon	
Respiratory, thoracic and mediastinal disorders	Common	Non-productive tickling cough, bronchitis, sinusitis, dyspnea	Dyspnea
	Uncommon	Bronchospasm including asthma aggravated, nasal congestion	Cough, rhinitis
Gastrointestinal disorders	Common	Gastrointestinal inflammation (inflammatory reactions of the gastrointestinal tract), digestive disturbances, abdominal discomfort, dyspepsia, diarrhea, nausea, vomiting	Abdominal pain, nausea, dyspepsia, altered bowel habits (including diarrhea and constipation)
	Uncommon	Fatal pancreatitis (cases of fatal outcome have been very exceptionally reported with ACE inhibitors), pancreatic enzymes increased, small bowel angioedema, abdominal pain upper including gastritis, constipation, dry mouth	Vomiting, dry mouth
	Rare	Glossitis	
	Very rare		Pancreatitis, gastritis, gingival hyperplasia
	Not known	Aphthous stomatitis (inflammatory reactions of the oral cavity)	
	Uncommon	Hepatic enzymes and/or bilirubin conjugated increased	
	Rare	Jaundice cholestatic, hepatocellular damage	
Hepatobiliary disorders	Very rare		Hepatitis, jaundice, hepatic enzymes increased (mostly consistent with cholestasis).

	Not known	Acute hepatic failure, cholestatic or cytolytic hepatitis (fatal outcome has been very exceptional)	
Skin and subcutaneous tissue disorders	Common	Rash in particular maculo-papular	
	Uncommon	Angioedema with fatal outcome (maybe/become life-threatening, rarely severe course can cause fatal obstruction), pruritus, hyperhidrosis (sweating)	Alopecia, purpura, skin discoloration, hyperhidrosis, pruritus, rash, exanthema urticaria
	Rare	Exfoliative dermatitis, urticaria, onycholysis,	
	Very rare	Photosensitivity reaction	Angioedema, erythema, multiforme, exfoliative dermatitis, Stevens-Johnson syndrome, Quincke oedema, photosensitivity
	Not known	Toxic epidermal necrolysis, Stevens-Johnson syndrome, erythema multiforme, pemphigus, psoriasis aggravated, dermatitis psoriasiform, pemphigoid or lichenoid exanthema or enanthema, alopecia	Toxic epidermal Necrolysis, Cutaneous pseudolymphoma, Lichenoid drug eruption, Lupus-like syndrome.
Musculoskeletal and connective tissue disorders	Common	Muscle spasms (muscle cramps), myalgia	Ankle swelling, muscle cramps
	Uncommon	Arthralgia	Arthralgia, myalgia, back pain
Renal and urinary disorders	Uncommon	Renal impairment including renal failure acute, urine output increased, worsening of a pre-existing proteinuria, blood urea increased, blood creatinine increased	Micturition disorder, nocturia, increased urinary frequency
Reproductive system and breast disorders	Uncommon	Transient erectile impotence, libido decreased	Impotence, gynecomastia
	Not known	Gynecomastia	

General disorders and administration site conditions	Very common		Oedema
	Common	Chest pain, fatigue	Fatigue, asthenia
	Uncommon	Pyrexia (fever)	Chest pain, pain, malaise
	Rare	Asthenia (weakness)	
Investigations	Uncommon		Weight increased, weight decreased

MANUFACTURED BY:

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