

# SUMMARY OF PRODUCT CHARACTERISTICS

## 1 NAME OF THE MEDICINAL PRODUCT

NATRILIX 2.5 mg Tablets

## 2 QUALITATIVE AND QUANTITATIVE COMPOSITION

One tablet contains 2.5 mg Indapamide hemihydrate

Excipient: 57.5mg lactose monohydrate

For a full list of excipients, see section 6.1

## 3 PHARMACEUTICAL FORM

Tablet

White, round, biconvex, film-coated tablets.

## 4 CLINICAL PARTICULARS

### 4.1 Therapeutic indications

For the treatment of essential hypertension. Natrilix may be used as sole therapy or combined with other antihypertensive agents.

### 4.2 Posology and method of administration

*Adults:*

The dosage is one tablet, containing 2.5 mg indapamide hemihydrate, daily, to be taken in the morning. The action of Natrilix<sup>®</sup> is progressive and the reduction in blood pressure may continue and not reach a maximum until several months after the start of therapy. A larger dose than 2.5 mg Natrilix<sup>®</sup> daily is not recommended as there is no appreciable additional antihypertensive effect but a diuretic effect may become apparent. If a single daily tablet of Natrilix<sup>®</sup> does not achieve a sufficient reduction in blood pressure, another antihypertensive agent may be added; those which have been used in combination with Natrilix<sup>®</sup> include beta-blockers, ACE inhibitors, methyldopa, clonidine and other adrenergic blocking agents. The co-administration of Natrilix<sup>®</sup> with diuretics which may cause hypokalaemia is not recommended.

There is no evidence of rebound hypertension on withdrawal of Natrilix<sup>®</sup>.

*Renal failure (see sections 4.3 and 4.4):*

In severe renal failure (creatinine clearance below 30 ml/min), treatment is contraindicated.

Thiazide and related diuretics are fully effective only when renal function is normal or only minimally impaired.

*Elderly (see section 4.4):*

In the elderly, the plasma creatinine must be adjusted in relation to age, weight and gender. Elderly patients can be treated with NATRILIX SR when renal function is normal or only minimally impaired.

*Patients with hepatic impairment (see sections 4.3 and 4.4):*

In severe hepatic impairment, treatment is contraindicated.

*Children and adolescents:*

NATRILIX 2.5mg is not recommended for use in children and adolescents due to a lack of data on safety and efficacy.

### **4.3 Contraindications**

- Hypersensitivity to indapamide, to other sulfonamides or to any of the excipients.
- Severe renal failure.
- Hepatic encephalopathy or severe impairment of liver function.
- Hypokalaemia.

### **4.4 Special warnings and precautions for use**

*Special warnings*

When liver function is impaired, thiazide-related diuretics may cause hepatic encephalopathy, particularly in case of electrolyte imbalance. Administration of the diuretic must be stopped immediately if this occurs.

*Photosensitivity:*

Cases of photosensitivity reactions have been reported with thiazides and thiazide-related diuretics (see section 4.8). If photosensitivity reaction occurs during treatment, it is recommended to stop the treatment. If a re-administration of the diuretic is deemed necessary, it is recommended to protect exposed areas to the sun or to artificial UVA.

*Excipients:*

Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine.

### Special precautions for use

#### - **Water and electrolyte balance:**

##### • Plasma sodium:

This must be measured before starting treatment, then at regular intervals subsequently. Any diuretic treatment may cause hyponatraemia, sometimes with very serious consequences. The fall in plasma sodium may be asymptomatic initially and regular monitoring is therefore essential, and should be even more frequent in the elderly and cirrhotic patients (see sections 4.8 and 4.9).

##### • Plasma potassium:

Potassium depletion with hypokalaemia is the major risk of thiazide and related diuretics. The risk of onset of hypokalaemia (< 3.4 mmol/l) must be prevented in certain high risk populations, *i.e.* the elderly, malnourished and/or polymedicated, cirrhotic patients with oedema and ascites, coronary artery disease and cardiac failure patients. In this situation, hypokalaemia increases the cardiac toxicity of digitalis preparations and the risks of arrhythmias.

Individuals with a long QT interval are also at risk, whether the origin is congenital or iatrogenic. Hypokalaemia, as well as bradycardia, is then a predisposing factor to the onset of severe arrhythmias, in particular, potentially fatal *torsades de pointes*.

More frequent monitoring of plasma potassium is required in all the situations indicated above. The first measurement of plasma potassium should be obtained during the first week following the start of treatment.

Detection of hypokalaemia requires its correction.

##### • Plasma calcium:

Thiazide and related diuretics may decrease urinary calcium excretion and cause a slight and transitory rise in plasma calcium. Frank hypercalcaemia may be due to previously unrecognised hyperparathyroidism.

Treatment should be withdrawn before the investigation of parathyroid function.

#### - **Blood glucose:**

Monitoring of blood glucose is important in diabetics, in particular in the presence of hypokalaemia.

#### - **Uric acid:**

Tendency to gout attacks may be increased in hyperuricaemic patients.

- **Renal function and diuretics:**

Thiazide and related diuretics are fully effective only when renal function is normal or only minimally impaired (plasma creatinine below levels of the order of 25 mg/l, *i.e.* 220 µmol/l in an adult). In the elderly, this plasma creatinine must be adjusted in relation to age, weight and gender.

Hypovolaemia, secondary to the loss of water and sodium induced by the diuretic at the start of treatment causes a reduction in glomerular filtration. This may lead to an increase in blood urea and plasma creatinine. This transitory functional renal insufficiency is of no consequence in individuals with normal renal function but may worsen preexisting renal insufficiency.

- **Athletes:**

The attention of athletes is drawn to the fact that this medicinal product contains a drug substance, which may give a positive reaction in doping tests.

#### **4.5 Interaction with other medicinal products and other forms of interaction**

Combinations that are not recommended:

**Lithium:**

Increased plasma lithium with signs of overdosage, as with a salt-free diet (decreased urinary lithium excretion). However, if the use of diuretics is necessary, careful monitoring of plasma lithium and dose adjustment are required.

Combinations requiring precautions for use:

**Torsades de pointes-inducing drugs:**

- class Ia antiarrhythmics (quinidine, hydroquinidine, disopyramide),
- class III antiarrhythmics (amiodarone, sotalol, dofetilide, ibutilide),
- some antipsychotics :

phenothiazines (chlorpromazine, cyamemazine, levomepromazine, thioridazine, trifluoperazine),

benzamides (amisulpride, sulpiride, sultopride, tiapride)

butyrophenones (droperidol, haloperidol)

others: bepridil, cisapride, diphemanil, erythromycin IV, halofantrine, mizolastine, pentamidine, sparfloracin, moxifloxacin, vincamine IV.

Increased risk of ventricular arrhythmias, particularly *torsades de pointes* (hypokalaemia is a risk factor).

Monitor for hypokalaemia and correct, if required, before introducing this combination. Clinical, plasma electrolytes and ECG monitoring.

*Use substances which do not have the disadvantage of causing torsades de pointes in the presence of hypokalaemia.*

**N.S.A.I.Ds. (systemic route) including COX-2 selective inhibitors, high dose salicylic acid ( $\geq 3$  g/day):**

Possible reduction in the antihypertensive effect of indapamide.

Risk of acute renal failure in dehydrated patients (decreased glomerular filtration). Hydrate the patient; monitor renal function at the start of treatment.

**Angiotensin converting enzyme (A.C.E.) inhibitors:**

Risk of sudden hypotension and/or acute renal failure when treatment with an A.C.E. is initiated in the presence of preexisting sodium depletion (particularly in patients with renal artery stenosis).

*In hypertension*, when prior diuretic treatment may have caused sodium depletion, it is necessary:

- either to stop the diuretic 3 days before starting treatment with the A.C.E. inhibitor, and restart a hypokalaemic diuretic if necessary;
- or give low initial doses of the A.C.E. inhibitor and increase the dose gradually.

*In congestive heart failure*, start with a very low dose of A.C.E. inhibitor, possibly after a reduction in the dose of the concomitant hypokalaemic diuretic.

*In all cases*, monitor renal function (plasma creatinine) during the first weeks of treatment with an A.C.E. inhibitor.

**Other compounds causing hypokalaemia: amphotericin B (IV), gluco- and mineralocorticoids (systemic route), tetracosactide, stimulant laxatives:**

Increased risk of hypokalaemia (additive effect).

Monitoring of plasma potassium and correction if required. Must be particularly borne in mind in case of concomitant digitalis treatment. Use non-stimulant laxatives.

**Baclofen:**

Increased antihypertensive effect.

Hydrate the patient; monitor renal function at the start of treatment.

**Digitalis preparations:**

Hypokalaemia predisposing to the toxic effects of digitalis.

Monitoring of plasma potassium and ECG and, if necessary, adjust the treatment.

Combinations to be taken into consideration:

**Potassium-sparing diuretics (amiloride, spironolactone, triamterene):**

Whilst rational combinations are useful in some patients, hypokalaemia (particularly in patients with renal failure or diabetes) or hyperkalaemia may still occur. Plasma potassium and ECG should be monitored and, if necessary, treatment reviewed.

**Metformin:**

Increased risk of metformin induced lactic acidosis due to the possibility of functional renal failure associated with diuretics and more particularly with loop diuretics. Do not use metformin when plasma creatinine exceeds 15 mg/l (135 µmol/l) in men and 12 mg/l (110 µmol/l) in women.

**Iodinated contrast media:**

In the presence of dehydration caused by diuretics, increased risk of acute renal failure, in particular when large doses of iodinated contrast media are used.

Rehydration before administration of the iodinated compound.

**Imipramine-like antidepressants, neuroleptics:**

Antihypertensive effect and increased risk of orthostatic hypotension increased (additive effect).

**Calcium (salts):**

Risk of hypercalcaemia resulting from decreased urinary elimination of calcium.

**Ciclosporin, tacrolimus:**

Risk of increased plasma creatinine without any change in circulating cyclosporin levels, even in the absence of water/sodium depletion.

**Corticosteroids, tetracosactide (systemic route):**

Decreased antihypertensive effect (water/sodium retention due to corticosteroids).

## **4.6 Pregnancy and lactation**

**Pregnancy:**

As a general rule, the administration of diuretics should be avoided in pregnant women and should never be used to treat physiological oedema of pregnancy. Diuretics can cause foetoplacental ischaemia, with a risk of impaired foetal growth.

**Lactation:**

Breast-feeding is inadvisable (Indapamide is excreted in human milk).

## 4.7 Effects on ability to drive and use machines

Indapamide does not affect vigilance but different reactions in relation with the decrease in blood pressure may occur in individual cases, especially at the start of the treatment or when another antihypertensive agent is added.

As a result the ability to drive vehicles or to operate machinery may be impaired.

## 4.8 Undesirable effects

The majority of adverse reactions concerning clinical or laboratory parameters are dose-dependent.

Thiazide-related diuretics, including indapamide, may cause the following undesirable effects ranked under the following frequency:

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

### **Blood and the lymphatic system disorders:**

Very rare: thrombocytopenia, leucopenia, agranulocytosis, aplastic anaemia, haemolytic anaemia

### **Nervous system disorders:**

Rare: vertigo, fatigue, headache, paresthaesia

### **Cardiac disorders:**

Very rare: arrhythmia, hypotension.

### **Gastrointestinal disorders:**

Uncommon: vomiting

Rare: nausea, constipation, dry mouth

Very rare: pancreatitis

### **Renal and urinary disorders:**

Very rare: renal failure

### **Hepato-biliary disorders:**

Very rare: abnormal hepatic function

Not known: possibility of onset of hepatic encephalopathy in case of hepatic insufficiency (see sections 4.3 and 4.4)

**Skin and subcutaneous tissue disorders:**

Hypersensitivity reactions, mainly dermatological, in subjects with a predisposition to allergic and asthmatic reactions:

- Common: maculopapular rashes
- Uncommon: purpura
- Very rare: angioneurotic oedema and/or urticaria, toxic epidermic necrolysis, Steven Johnson syndrome

Not known: possible worsening of pre-existing acute disseminated lupus erythematosus.

Cases of photosensitivity reactions have been reported (see section 4.4).

**Laboratory parameters :**

During clinical trials, hypokalaemia (plasma potassium <3.4 mmol/l) was seen in 10 % of patients and < 3.2 mmol/l in 4 % of patients after 4 to 6 weeks treatment. After 12 weeks treatment, the mean fall in plasma potassium was 0.23 mmol/l.

Very rare : Hypercalcaemia

Not known:

- Potassium depletion with hypokalaemia, particularly serious in certain high risk populations (see section 4.4).
- Hyponatraemia with hypovolaemia responsible for dehydration and orthostatic hypotension. Concomitant loss of chloride ions may lead to secondary compensatory metabolic alkalosis: the incidence and degree of this effect are slight.

Increase in plasma uric acid and blood glucose during treatment: appropriateness of these diuretics must be very carefully weighed in patients with gout or diabetes.

**4.9 Overdose**

Indapamide has been found free of toxicity at up to 40 mg, *i.e.* 27 times the therapeutic dose.

Signs of acute poisoning take the form above all of water/electrolyte disturbances (hyponatraemia, hypokalaemia). Clinically, possibility of nausea, vomiting, hypotension, cramps, vertigo, drowsiness, confusion, polyuria or oliguria possibly to the point of anuria (by hypovolaemia).

Initial measures involve the rapid elimination of the ingested substance(s) by gastric wash-out and/or administration of activated charcoal, followed by restoration of water/electrolyte balance to normal in a specialised centre.

**5 PHARMACOLOGICAL PROPERTIES****5.1 Pharmacodynamic properties**

Pharmacotherapeutic group: Sulfonamides, plain

ATC code: C 03 BA 11

Natrilix<sup>®</sup> (indapamide) is a non-thiazide sulphonamide with an indole ring, belonging to the diuretic family. At the dose of 2.5 mg per day Natrilix<sup>®</sup> exerts a prolonged antihypertensive activity in hypertensive human subjects.

Dose-effect studies have demonstrated that, at the dose of 2.5 mg per day, the antihypertensive effect is maximal and the diuretic effect is sub-clinical.

At this antihypertensive dose of 2.5 mg per day, Natrilix<sup>®</sup> reduces vascular hyperreactivity to noradrenaline in hypertensive patients and decreases total peripheral resistance and arteriolar resistance.

The implication of an extrarenal mechanism of action in the antihypertensive effect is demonstrated by maintenance of its antihypertensive efficacy in functionally anephric hypertensive patients.

The vascular mechanism of action of Natrilix<sup>®</sup> involves:

- a reduction in the contractility of vascular smooth muscle due to a modification of transmembrane ion exchanges, essentially calcium;
- vasodilatation due to stimulation of the synthesis of prostaglandin PGE<sub>2</sub> and the vasodilator and platelet antiaggregant prostacyclin PGI<sub>2</sub>;
- potentiation of the vasodilator action of bradykinin.

It has also been demonstrated that in the short-, medium- and long-term, in hypertensive patients, Natrilix<sup>®</sup>:

- reduces left ventricular hypertrophy;
- does not appear to alter lipid metabolism: triglycerides, LDL-cholesterol and HDL-cholesterol;
- does not appear to alter glucose metabolism, even in diabetic hypertensive patients. Normalisation of blood pressure and a significant reduction in microalbuminuria have been observed after prolonged administration of Natrilix<sup>®</sup> in diabetic hypertensive subjects.

Lastly, the co-prescription of Natrilix<sup>®</sup> with other antihypertensives (beta-blockers, calcium channel blockers, angiotensin converting enzyme inhibitors) results in an improved control of hypertension with an increased percentage of responders compared to that observed with single-agent therapy.

## 5.2 Pharmacokinetic properties

Indapamide is rapidly and completely absorbed after oral administration. Peak blood levels are obtained after 1 to 2 hours.

Indapamide is concentrated in the erythrocytes and is 79% bound to plasma protein and to erythrocytes. It is taken up by the vascular wall in smooth vascular muscle according to its high lipid solubility. 70% of a single oral dose is eliminated by the kidneys and 23% by the gastrointestinal tract. Indapamide is metabolised to a marked degree with 7% of the unchanged product found in the urine during the 48 hours following administration. Elimination half-life ( $\beta$  phase) of indapamide is approximately 15 - 18 hours.

### **5.3 Preclinical safety data**

No findings in the preclinical testing which could be of relevance for the prescriber.

## **6 PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

#### Tablet

Lactose monohydrate,  
maize starch,  
magnesium stearate,  
talc,  
povidone.

#### Tablet Coating:

glycerol,  
white beeswax,  
sodium lauryl sulphate,  
methylhydroxypropylcellulose,  
polyoxyethylene glycol 6000,  
magnesium stearate,  
titanium dioxide.

### **6.2 Incompatibilities**

Not applicable

### **6.3 Shelf life**

5 years.

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

This medicinal product does not require any special storage conditions.

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

30 tablet pack: 1 blister strip (PVC / Aluminium) of 30 tablets per carton.  
60 tablet pack: 2 blister strips (PVC / Aluminium) of 30 tablets per carton.

**6.6 Special precautions for disposal**

No special requirements

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**7 MARKETING AUTHORISATION HOLDER**

Servier Laboratories Ltd  
Gallions, Wexham Springs  
Framework Road, Wexham  
Slough  
SL3 6RJ

**8 MARKETING AUTHORISATION NUMBER(S)**

PL 0093/0022

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

20 December 1977

**10 DATE OF REVISION OF THE TEXT**

01/2008