



MEDICAL-SCIENTIFIC IN-DEPTH ANALYSIS

# Calcorel<sup>®</sup>

20 TABLETS



## INDICATIONS

Prevention and treatment of lithiasis. Moreover, it favours the physiological renal functions.

## COMPOSITION

(per daily dose 1 tbl)

**Citrates** (of Potassium and magnesium) 310 mg

**Phyllanthus** (*Phyllanthus niruri*) herb d.e. 15%

Tannins 220 mg

**Chrysanthellum** (*Chrysanthellum americanum*)

herb d.e. 1/4 55 mg

## DIRECTIONS

Take 1 tablet a day, preferably far from meals.

**CALCOREL<sup>®</sup> DOES NOT CONTAIN GLUTEN, LACTOSE AND GLUCOSE**

Register of Food supplements of the Italian Ministry of Health  
CODE nr. 41278

# USE OF POTASSIUM-MAGNESIUM CITRATES AND PHYLLANTUS NIRURI AFTER THE TREATMENT OF CALCIUM RENAL CALCULI WITH EXTRACORPOREAL SHOCK-WAVES LITHOTRIPSY (ESWL).

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## INTRODUCTION

10 out of 100 people are affected by renal calculi.

This pathology can be classified according to calculus location (caliceal or pelvic), their composition (calcium oxalate and phosphate, which form about 70% of the total number of stones, uric acid for 10%, struvite for 8% and cystine for 2%), their size and hardness (particularly hard are calcium oxalate monohydrate-brushite, calcium hydrogen-phosphate and cystine stones).

Treatment indications for renal calculi are: in case of obstruction, for stones with a diameter >15 mm or <15 mm with pain, in case of stone regrowth after the treatment or infection. ESWL remains the first-choice treatment for <2 cm pelvic and caliceal stones (EAU-Guidelines on Urolithiasis 2012. Recommendation grade: A).

Treatment efficacy depends on calculus location, size and hardness.

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## PHYSIOPATHOLOGY AND THERAPY

Hypercalcinuria is the most common metabolic anomaly associated with the formation of calcium calculi (30-60%) followed by hyperoxaluria (26-67%), hyperuricosuria (15-46%), hypomagnesuria (7-23%) and hypocitraturia (5-29%). The most common risk factors are: early onset, familiarity, hyperparathyroidism, nephrocalcinosis, gastrointestinal diseases with altered reabsorption such as jejunio-ileal bypass, intestinal resections, Crohn's disease and enteric hyperoxaluria after urinary diversion.

The excretion of citrate in urine was significantly lower in patients with calcium calculi compared to normal people and approximately 30% of calcium lithiasis formers can be considered as hypocitraturic. Citrate has significant effects on the supersaturation of calcium oxalate and phosphate and inhibits the growth of such crystals.

The daily intake of potassium-magnesium citrate causes an increase in citrate excretion with a diminished calcium-citrate ratio and consequently a supersaturation with calcium oxalate. This results in a decrease in calcium formation. Magnesium is also very important for calcium phosphate crystallization. The increased level of magnesium in urine reduces the activity of calcium oxalate ions and inhibits the growth of calcium phosphate crystals. It is proved that a high level of magnesium in urine reduces the risk of formation of brushite calculi.

It has been demonstrated that the extract of phyllanthus niruri, a tropical plant, is effective in the treatment of calcium oxalate calculi after ESWL. Its role seems to be related to the inhibition of the processes of reaggregation of fragments with the consequent dissolution of smaller stones as a result of the increased solubility of calcium oxalate.

In order to prevent the formation of calcium calculi, the daily intake of calcium should be 1-1.2 grams as a maximum while an excessive quantity of vitamin C should be avoided as it is an oxalate precursor. The daily intake of sodium should be 3-5 grams to avoid an increase in calcium excretion with a consequent decrease in citrate in urine. The intake of about 2 litres of water a day and regular physical activity are useful.

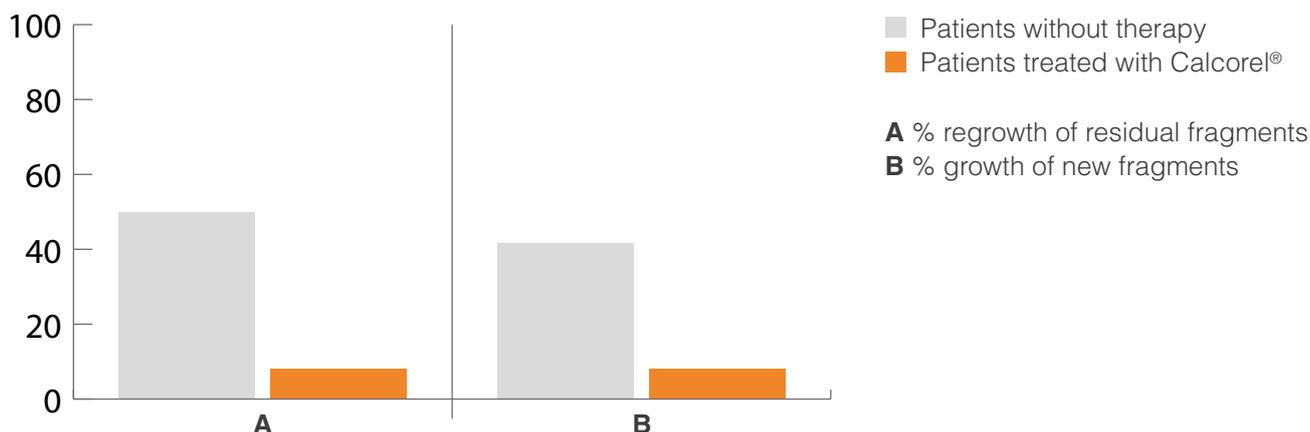
## MATERIALS AND METHODS

From April to October 2012 we treated 49 patients aged between 25 and 70 affected by radiopaque renal lithiasis with ESWL according to EAU guidelines. We excluded the patients with ascertained urinary biochemical abnormalities.

25 patients took 1 tablet of Calcorel®/day for 6 months while 24 patients did not take any drug. The follow-up was after 10 months by ultrasound and abdominal x-ray taken without contrast.

## CONCLUSIONS

After quite a short follow-up period, there have been significant differences in terms of growth of new fragments and regrowth of residual fragments after the treatment. The regrowth of residual fragments after ESWL occurred in 8% of the patients treated with Calcorel® vs. 50% of the patients who did not undergo any therapy. 8% of initially stone-free patients treated with Calcorel® developed new calculi vs. 41.7% of those who were not treated. The conclusion is that the treatment with potassium-magnesium citrate and phyllanthus niruri (Calcorel®) has positive effects on patients with or without residual fragments after ESWL.



## BIBLIOGRAPHY

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