

# Urticaria due to calcium pidolate

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## ABSTRACT

Calcium salts are often prescribed in the prevention and treatment of osteoporosis. Adverse reactions have been described, mostly concerning to the gastrointestinal tract, parathyroid glands and bone resorption. We report the case of a 52-year-old woman who started treatment with 500 mg per day of calcium-pidolate. 90 minutes after the intake of the second dose, she experienced an itchy maculopapular eruption. Skin Prick Tests were carried out with the implicated drug and calcium-carbonate and they both were negatives. An oral-challenge-test with 500 mg of calcium-pidolate was ruled out. 60 minutes later, the patient responded positively when she experienced a similar reaction with erythematous and itchy papulae on the trunk and the neck. Finally, an oral-challenge-test with 500 mg calcium-carbonate was performed with good tolerance. To the best of our knowledge, this is the first documented case of allergy to calcium-pidolate with tolerance to other calcium salt.

**Key words:** Calcium pidolate. Allergy. Hypersensitivity. Calcium salts. Osteoporosis.

## INTRODUCTION

Calcium salts have been of great interest in medicine. They are widely prescribed, as monotherapy or in combination with other drugs, in the prevention and treatment of osteoporosis, mainly in elderly patients<sup>1</sup>. Other therapeutic applications are in osteopenia; in hypocalcemia states; as dietary supplement, according to the recommended daily ingesta and also, in vascular illnesses like in internal haemorrhoids, phlebopathy and in diabetic retinopathy. The metabolism, the bioavailability and the clinical formulations vary significantly according to the salt used. Although the tolerance and lack of side effects is the common feature with calcium salts, adverse reactions to calcium salts have been described, mostly concerning to the gastrointestinal tract and affecting on parathyroid glands and bone resorption<sup>2</sup>. Commercially, there are different current available calcium salts with easy oral absorption. They differ only in regard to their bioavailability. However, calcium pidolate seems to have fewer adverse effects, especially over serum parathyroid hormone values<sup>3</sup>. Moreover, allergic reactions to calcium salts are rare. Until now, there are no documented reports of hypersensitivity reactions to the calcium pidolate salt.

## CASE REPORT

We studied the case of a 52-year-old woman with no other significant medical background than she had been diagnosed with osteoporosis two years ago. Her personal and family histories were negative for allergic diseases; in particular, she had not experienced adverse reactions to other drugs. She started treatment with 500 mg per day of calcium pidolate. The second day, 90 minutes after the intake of the calcium pidolate pill, she experienced an itchy maculopapular eruption on her neckline and trunk with

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hives and mild facial angioedema requiring emergency medical care at hospital. The patient completely recovered after the administration of parental treatment with antihistamines and oral corticoids. She had never presented any similar episodes and she excluded the implication of any food or other drugs.

In our Hospital's Allergy Service, Skin Prick Tests were carried out on the volar side of the forearm with the implicated drug (50, 100 and 500 mg/ml) and calcium carbonate (50 mg/ml). The responses were assessed at 15 minutes and 24 hours. They were all negatives. Histamine control at 10 mg/ml (ALK-Abelló, Madrid, Spain) was positive with a wheal of 6 × 6 mm. An intradermal test was not performed due to its possible irritant effect.

After a normal physical examination, a single blind placebo-controlled oral-challenge-test with progressively increasing amounts of calcium pidolate was ruled out, reaching an accumulate dose of 500 mg 60 minutes later, the patient responded positively when she experienced a similar reaction to the one she had previously described. She developed erythematous and itchy papulae on the trunk, upper back and the neck and diffuse pruritus. The clinical picture completely abated 2 h after the parental administration of 6-methylprednisolone (80 mg) and dexchlorpheniramine (5 mg). Finally, in order to find an alternative treatment, an oral challenge test with 500 mg calcium carbonate was performed one month later, with good tolerance to the calcium salt.

## DISCUSSION

Although calcium salts are often used, hypersensitivity reactions to calcium salts are extremely rare. There have been described some few cases of contact dermatitis associated to calcium thioglycolate in depilatories (4) but there are not reported cases of acute urticaria, angioedema or anaphylaxis.

In this present study, the patient developed acute urticaria in a very short time after the exposition to

one calcium salt. The episode could not be attributed to the administration of other drugs because she did not take any other treatment and the positive oral challenge test with the implicated drug confirmed the relationship between the drug and the reaction. Unfortunately, we cannot explain if an IgE-mediated mechanism is involved in this case. We neither know if she could be sensitized through a previous treatment with other calcium salt because they are often taken in multi-vitamin complex. However, a normal tolerance to calcium carbonate could be demonstrated, appearing that it is a selective allergy to calcium pidolate or at least, that a cross-reactivity mechanism is not always present between all the different calcium salts.

In summary, to the best of our knowledge, this is the first documented case of immediate allergic reaction to calcium pidolate, confirmed with a positive oral challenge test to the drug. From the results in this case, it could not be necessary the exclusion of other different calcium salts, but we suggest that tolerance to other calcium salts should always be tested by an experienced allergist using an oral challenge test.

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