

**Impetigo Herpetiformis: A Rare Mode of Revelation of Hypocalcemia**

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**Abstract:** Impetigo herpetiformis is a very rare and severe pustular dermatosis, which can be accompanied by fever, neuro-muscular disorders and digestive disorders; which can be life-threatening and requiring emergency management. Its pathophysiology remains poorly elucidated. We report a case of this condition, revealing a severe hypocalcemia and responding very well to the calcium recharge.

**Keywords:** Impetigo herpetiformis, hypocalcemia, hypoparathyroidism, vitamin D, calcium.

**INTRODUCTION**

Impetigo herpetiformis is a rare dermatologic disorder, mimicking generalized pustular psoriasis of von Zumbush. It is characterized by a generalized erythema-pustular eruption accompanied by fever. Its etiopathogenesis is poorly codified but triggering factors have been identified such as hypocalcemia in more than half of the cases and pregnancy, ultraviolet radiation, corticosteroids and infections [1]. We report a case of severe hypocalcemia secondary to hypoparathyroidism revealed by impetigo herpetiformis.

**CASE REPORT**

A 46-year-old woman admitted to hospital emergency room for a generalized rash in a fever setting. Personal history included 12-year-old total thyroidectomy with iatrogenic hypoparathyroidism undergoing substitution therapy, 3 episodes of "psoriasis flare-ups", and depressed mood; who had for 15 days erythematous cupboards that have recently conflued (Fig 1a), with the notion of stopping ergocalciferol for a month.

The examination at admission revealed a febrile patient at 38.5°C with erythroderma covering

more than 80% of the skin surface, interspersed with follicular pustules (Fig 1b).



**Fig-1: a. confluent erythematous placards, b: amicrobial pustulosis**

The mucous membranes were spared. The hair was dry with multiple scales and there was onychosis. The neurological examination was without abnormalities. Biology revealed severe hypocalcemia at 57 mg/l, hyperphosphatemia, with a rate of parathyroid hormone at 2 µg / ml (NV > 24). The electrocardiography has objectified a long corrected QT

space. The histological aspect was that of impetigo herpetiformis and not psoriasis.

The patient is treated with calcium infusion and 2 g / day of oral calcium and 2 microgram of ergocalciferol per day. The evolution is marked by the regression of the pustules of more than 90% of the

lesions with appearance of desquamation plaques wide at the 4th day (fig 2), with a complete disappearance of the lesions at the 8th day, concomitant with the correction of the calcemia.

The treatment comes down to vitamin-calcium supplementation with psychiatric follow-up.



**Fig-2: Extensive desquamation plates - lesions healing.**

## DISCUSSION

Impetigo herpetiformis is a rare skin disorder, first described in 1872 by von Hebra. It is manifested by a generalized amicrobial pustulosis, often associated with a fever, arthralgia, even an obnubilation. The histological lesion is a spongiform pustulosis typical of the superficial dermis [2]. The factors implicated are mainly hypocalcemia and pregnancy, then cortisone withdrawal, topical corticosteroids with very high activity under occlusive dressing, bethalactamines, lithium, stress, alcoholic intoxications and hypercalcitoninemia [3-7].

Several observations of amicrobial pustulosis (generalized pustular psoriasis, impetigo herpetiformis and psoriasis vulgaris) related to hypocalcemia have been reported in the literature [8-11]. This rash is not specific to hypoparathyroidism since it has been described with hypocalcemia of various etiologies: idiopathic or surgical hypoparathyroidism, vitamin D malabsorption, pseudo-hypoparathyroidism and renal failure.

This may be secondary to chronic hypocalcemia which is responsible for skin changes: neurosis, keratosis with sometimes an edematous appearance of the skin; associating with it the alteration of the function of cadherin's which are essential for cell adhesion and which are calcium-dependent. Fibroblasts and keratinocytes have receptors for vitamin D and its analogues, which play an important role in their differentiation and proliferation [12-13].

These data may explain the role of hypocalcemia in triggering impetigo herpetiformis [14-17]. Indeed, the administration of calcium and vitamin

D has removed the dermatological problems in our observation.

## CONCLUSION

All cases of amicrobial pustulosis illustrate the definite relationship between the rash and the calcium-PTH-vitamin D axis, presumably by hypocalcemia. The correction of the calcemic is one of the pillars of the treatment. The regression of the lesions is obtained after correction of calcium by the contribution of calcium and vitamin D. The authors do not declare any conflict of interest.

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