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Hypersensitivity Reaction to Triptorelin in a 4-Year Old Girl

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Abstract

We report the case of a girl, with idiopathic Central Precocious Puberty (CPP), who experienced multiple episodes of erythematous rashes after the subcutaneous administration of Decapeptyl® (triptorelin). The allergological evaluation (including prick, intradermal and patch tests with the indicted drug and inhalant and food allergens) was negative. Considering that she needed to use GnRH analogs to treat CPP, a tolerance test with an alternative medication such as leuprolide acetate (Enantone®) was performed with an antihistamine coverage (cetirizine). The girl continued this treatment without side effects for 6 months, when experienced again a macula-papular exanthema. Given that triptorelin is the mainstay therapy for the CPP, we tested this medication prior cetirizine and betamethasone 1 mg, without problems, allowing her to easily manage her disease.

Keywords

Allergic sensitization; Children; Pubertal disorders; Sexual maturation

Introduction

Central Precocious Puberty (CPP) is defined as an early activation of the hypothalamic-pituitary-gonadal axis leading to the development of early sexual maturation in children. The gonadotropin-releasing hormone (GnRH) analogs are the mainstay of its treatment [1-4].

Clinical Case

We report the case of a 4-year old girl, with idiopathic CPP and negative clinical history for allergic diseases, who experienced multiple episodes of erythematous rashes after 40-60 minutes from the subcutaneous administration of Decapeptyl® (triptorelin). Every time her symptoms were treated with antihistamines and corticosteroids and receded in four days.

She was referred to our Allergy Unit and, to clarify a possible allergic reaction after triptorelin use, we conducted a complete allergological evaluation, including prick, intradermal and patch tests with the indicted drug. We also tested inhalant and food allergens to exclude their involvement with negative outcomes.

For skin testing, we used undiluted and 1:10 solution of the commercial drug as recommended by the European Network on Drug Allergy (ENDA) [5]. We tested the triptorelin solution on volar forearm skin using the prick and intradermal methods and the reaction was read at 20 minutes. For patch testing, the same solutions of the hormon prepared as above were applied in the interscapular region and the reading was made after 72 hours. Positivity was assessed according to the recommendations of the ENDA [5]. We also performed all the above allergological tests with triptorelin in 5 healthy adult subjects.

Allergological tests performed with triptorelin were negative in our patient and in the 5 healthy subjects. Considering that she needed to use GnRH analogs to treat CPP, an oral challenge test with an alternative medication was planned. Therefore an oral tolerance test with leuprolide acetate (Enantone®) was performed with an antihistamine coverage (cetirizine). The girl continued this treatment without side effects for 6 months, when experienced again a macula-papular exanthema.

Since triptorelin is the mainstay therapy for the CPP, we decided to test this medication prior cetirizine and betamethasone 1 mg. The girl tolerated it and continues to tolerate it monthly without problems, allowing her to easily manage her disease.

Discussion

A literature review identified a single case report of an allergic skin vasculitis following the treatment with triptorelin, suggested by a positive macrophage migration inhibition factor (MIF) test toward the drug [6]. We found, instead, several reports about systemic hypersensitivity reactions to other GnRH analogs such as goserelin acetate and leuprolide acetate [7]. Moreover a recent report showed a case of anaphylaxis (lost consciousness and tonic seizures began in her hands and feet) within 3 minutes after intravenous administration of gonadorelin acetate, treated with epinephrine, diphenhydramine and fluids [8].

In our report, for the first time we showed that the medication that caused adverse reactions could be administered prior antihistamines and steroids without problems. Clinicians should be aware of the potential association of GnRH analogs with adverse reactions and evaluate that, if the medication is essential and the allergological tests are negative, an appropriate anti-reactive therapy can be established

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to prevent adverse reactions without interfering with the action of the drug.

Declaration of interest

We declare any financial or other potential conflict of interest.

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