Anapylaxis Secondary to Gonadotrophin Releasing Hormone Agonist used for Central Precocious Puberty,

Case Reports of Two Patients.

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Introduction

Gonadotropin Releasing Hormone agonists (GnRHa) are used in the management of central precocious puberty. They have been associated rarely with severe adverse effects such as slipped capital femoral epiphysis, sterile abscess formation, and anaphylaxis. Anaphylactic reactions had been reported at a low incidence rate. They can occur early or late after starting treatment or they may be recurrent after an injection, due to the agonist's long half-life. The allergic reaction may be against the agonist itself or its vehicle, Polyacetic and Glycolic acids. Anaphylaxis to multiple agonists had been seen in the same patient.

Objective

The objective of this case report is to present two cases that developed anaphylactic reactions after Triptorelin Acetate depot injection which was used to treat central precocious puberty.

Method

The clinical information and lab results were obtained directly from the parents and the computerised medical records at the treating hospital.

Results

Case 1: A diagnosed case of MPS Type3b, presented with vaginal bleeding at 6 ½ years. The bleeding was of moderate amount and lasted for 8 days. The parents are consanguineous. They have another younger normal child. The mother had her menarche at 12 years. **On examination**: She was hirsute with coarse facial features and drooling of saliva. Her height was difficult to measure, weight: 25kg (75th-90th centile). There were 4 café au lait spots on the trunk and right thigh. She was detached from her surroundings, not talking, and walking with a limp. Systemic examination revealed hepatomegaly of 4 cms and splenomegaly of 5 cms, Kyphoscoliosis of the back, pectus excavatum with contractures of the Tendon Achillis bilaterally and bilateral ankle clonus. **Investigations:** LH: 5.5 IU/L, FSH: 7.9IU/L, Estradiol: <18.4 pmol/L. WBC: 4.78 x10 9/L, Plat: 197x10 9/L. Brain MRI: Non-obstructive hydrocephalus with diffuse cerebral atrophy and thinned out corpus callosum. She was started on Triptorelin Acetate: 3.75 mg I.M. monthly, in order to halt the vaginal bleeding. One and a half hours after the 1st injection she developed anaphylactic reaction in the form of redness of the cheeks and ears followed by red spots on the forehead and chin and swelling of the lips, palms and soles. This was treated at the Emergency Room with I.M. Adrenaline, I.V. Hydrocortisone, and Chlorpheniramine.

The Triptorelin was discontinued. She missed her period the month following the injection, and had bleeding per vagina for two days the month after. Later, the period was coming regularly. MedroxyProgesterone injections were planned to control the vaginal bleeding, but the parents refused.

Currently: She is globally developmentally delayed, but with no further deterioration. She gets her period regularly every 21 days, lasting 7-9 days, with Moderate bleeding.

Figure 1 : Case 1 with features of MPS

Case 2: A normal girl with no previous abnormal medical history. She presented at the age of 8 years and one month to the p.endocrine clinic for pubic hair, noticed by the mother at 7 years and 9 months and breast buds at 7 years and 11 months. The parents are non-consanguineous with two other normal boys. The mother attained menarche at 11 years. On examination, weight: 37.5kg (> 97th centile) and height: 134cm, (90-97th), hypertrichosis ++. Pubertal Staging: B2, 2 A1 P3 M0. Investigations : Estradiol: < 18.4 pmol/L, Base line LH: 0.28 IU/L, FSH: 2.21 IU/L. FT4: 0.96ng/dL, TSH: 3.4uIU/mL. DHEAS: 281 ng/ml, 17OHP: 0.1ng/mL. Bone Age: 9yrs at a chronological age of 8yrs. Her predicted adult Ht (PAHt): 170 cms. On follow up at 9 yrs, she had a Ht. velocity of 9 cms/yr (> 97th centile). Her Ht. 143 cms (> 97th centile) and Wt. 0.5 kg (> 97th). The (PAHt):162 cms. Pubertal Staging: B 3, 3 A1 P3, M0. Investigations revealed: Estradiol: 127.3 pmol/L, Base line LH: 2.5 IU/L, FSH: 5.8 IU/L. Post ACTH Stimulation @ (20mins) LH: 72.2 IU/L, FSH: 22.1 IU/L, @ (60 mins) LH: 66.1 IU/L, FSH: 26.1IU/L, FT4: 0.93ng/dL, Prolactin: 153 mIU/L, BHCG < 0.1 IU/, Bone Age: 12 yrs. She was started on monthly Triptorelin Acetate inj. 3.75 mg to halt puberty and preserve her adult height potential. She had her first injection with no complications. The following month, 15 mins after the injection, she developed itching all over the body, then rash appeared on the forearms, spread to the trunk, back and face. She was treated in the emergency room with I.V. Hydrocortisone and Chlorpheniramine. It was decided to discontinue the Triptorelin. Currently she is 9 years and 10 months. Her height is 149 cms (97th centile) and her weight, 45 kg (90th centile). She has not had her period yet.

Figure 2.Bone Age of 9yrs at chrnological age of 8

Figure 3 Bone Age of 12 yrs at chronological age of 9.

Conclusions

Although anaphylactic reactions are considered as rare adverse effects to GnRHa, they are presently seen more frequently as a result of the increased incidence/diagnosis of central precocious puberty and the more frequent use of the agonists. A pre-injection skin test is to be considered prior to the 1st injection and patient and parent education on the anaphylactic reaction potential, and its symptoms and signs is mandatory to prevent harmful consequences.

Contact

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