Case Report

Methimazole induced lichenoid eruptions: an unusual case

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ABSTRACT

This is a case report of a 31-year-old male presented to the Endocrinology outpatient department of our hospital with hyperthyroidism and was prescribed tablet methimazole 30mg once daily and tablet propranolol 40mg once daily. After 3 months, the patient complained of violaceous papular lesions on both the extensor aspect of the arms and legs. Physical examination was remarkable for acute onset, raised, itchy, violaceous papular lesions over the defined areas. The drug methimazole was suspected to cause lichenoid drug eruptions and was withdrawn. This case illustrates methimazole otherwise an efficacious and widely used anti thyroid drug is an agent capable of inducing lichenoid eruptions. However in future the monitoring of methimazole is essential for such adverse reaction.

Keywords: Adverse drug reaction, Methimazole, Lichenoid drug eruptions

INTRODUCTION

Lichenoid eruptions are a type of dermatitis caused by various inhaled, contact or ingested materials such as environmental agents, industrial by-products and medications. When it is induced by a medication it can be called more specifically a lichenoid drug eruption (LDE).1

Methimazole is one of the most commonly used antithyroid drugs, which belongs to thionamide group. The mechanism of action is by inhibiting the synthesis of hormone by blocking the oxidation of iodine. The usual dose in an adult is 0.5-1mg/kg. Common adverse effects of methimazole are skin rash, agranulocytosis and gastrointestinal symptoms.2

CASE REPORT

A 31 year old male who was diagnosed to have Graves’s disease after clinical, laboratory investigation and imaging studies, was prescribed tablet methimazole 30mg once daily in divided doses along with tablet propranolol 40 mg once daily. He was asked to review in our patient department of Endocrinology after 3 months.

After 3 months he came with the complaints of itchy lesions over his upper and lower extremities, which lasted for 2 weeks and was gradual in onset. He gave no history of associated fever, insect bite, or any other drug intake. On examination, there were violaceous papular lesions over the extensor aspect of both upper limbs and the left lower limb. After taking opinion from dermatologists, diagnosis of drug induced lichenoid eruptions was made. Tablet methimazole was suspected and withdrawn. Tablet propylthiouracil was started instead of tablet methimazole.
and propranolol was continued as before. Within 1-2 weeks the lesions started subsiding and by 5 weeks the lesions completely subsided without any sequel.

**Figure 1:** Lichenoid eruptions in extensor part of both the upper limbs.

**Figure 2:** Lichenoid eruptions in extensor part of the right upper limb.

Based on the information, this case had a Naranjo score of 5, i.e., probable adverse drug reaction (ADR). The causality assessment for the methimazole according to WHO-UMC scale revealed as being probable/likely.

**Figure 3:** Lichenoid eruptions in the left lower limb knee.

**DISCUSSION**

The pathophysiology of lichenoid drug eruptions is unknown. But a type IV hypersensitivity is suspected. A dose dependency is postulated. Some drugs can change surface antigen and some can change enzyme system. All these aberrations may precipitate immune response by activating cytotoxic CD8+ T cells. There may be development of clones of T cells, which are directed against class II MHC antigen complex. Those cells will identify basal keratinocytes and Langerhans cells located in skin as non-self and damage them leading to lichenoid eruptions. The time taken for the eruptions to heal depends on clearance of the damaged basal keratinocytes from the skin tissue. Lichenoid reaction can also be induced in animals using cloned murine autoreactive T cells. There is a correlation between the class II MHC expressing keratinocytes and Langerhans’ cells and presence of epidermotropic T cells in the body.

Lichenoid eruptions can manifest as maculo papular skin lesions, or sometimes it can be pleomorphic. Usual sites of occurrence are extensor surfaces of the upper limb and on the back. But rarely on wrists, mucous membranes (which are usual for lichen planus). Generally lesions appear after few weeks to few months of start of the therapy. Lesions heal with hyperpigmentation or without any sequel. The drugs causing lichenoid eruptions are acyclovir, antibiotics like tetracycline, isoniazid, antimalarial drugs, dapsone, gold salts, methyldopa, penicillamine, quinine, and thiazide diuretics.
There are several case reports about methimazole causing rare adverse effects such as bullous systemic lupus erythematosus, myositis, vasculitis like picture and also erythema like lesions. But none have reported lichenoid eruptions as an adverse effect of methimazole.

CONCLUSION

Methimazole is capable of precipitating lichenoid eruptions. Monitoring of patients on methimazole for such adverse reaction is essential in future.

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