

Methimazole induced lichenoid eruptions: an unusual case**Vibhashree G. N.^{1*}, Anuradha H. V.¹, Pramila Kalra²**¹Department of Pharmacology,
²Department of Endocrinology,
Ramaiah Medical College,
Bangalore, Karnataka, India**Received:** 10 April 2017**Accepted:** 02 May 2017***Correspondence to:**Dr. Vibhashree G. N.,
Email: vibbi.shree@gmail.com**Copyright:** © the author(s),
publisher and licensee Medip
Academy. This is an open-
access article distributed under
the terms of the Creative
Commons Attribution Non-
Commercial License, which
permits unrestricted non-
commercial use, distribution,
and reproduction in any
medium, provided the original
work is properly cited.**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 The drug methimazole was suspected to cause lichenoid drug eruptions and was withdrawn.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 out 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).³ The causality assessment for the methimazole according to WHO-UMC scale revealed as being probable/likely.⁴



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.⁵ 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.⁶

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.⁷ The drugs causing lichenoid eruptions are acyclovir, antibiotics like tetracycline, isoniazid, antimalarial drugs, dapsone, gold salts, methyldopa, penicillamine, quinine, and thiazide diuretics.⁸

There are several case reports about methimazole causing rare adverse effects such as bullous systemic lupus erythematosus, myositis, vasculitis like picture and also ecthyma like lesions.⁹⁻¹² 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.

ACKNOWLEDGMENTS

It is with immense gratitude, the authors would like to thank the patient for his cooperation and patience and also grateful to Professor and Head of the Department of Pharmacology, Dr. M.C Shivamurthy for supporting them to study this case.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Ghosh S. Generalized lichenoid drug eruption associated with imatinib mesylate therapy. Indian Journal of Dermatology. 2013;58(5):388.
2. Melmed S, Kenneth S. William textbook of endocrinology. Elsevier; 2015.
3. Naranjo CA, Busto U, Sellers EM, Sandor P, Ruiz I, Roberts EA, et al. A method for estimating the probability of adverse drug reactions. Clinical pharmacology and therapeutics. 1981;30(2):239.
4. World Health Organization. The use of the WHO-UMC system for standardized case causality assessment. Uppsala: The Uppsala Monitoring Centre; 2005.
5. Shiohara T, Holubar C. The Lichenoid Tissue Reaction. The American Journal of Dermatopathology. 1988;10(3):257-69.
6. Rook A. T. Rook's textbook of Dermatology. Chichester, West Sussex, UK: Wiley-Blackwell; 2010.
7. Fitzpatrick T, Freedberg I. Fitzpatrick's Dermatology in General Medicine. New York: McGraw-Hill, Medical Pub. Division; 2003.
8. Braun-Falco, Otto et al. Dermatology. 1st Ed. Berlin: Springer; 1991.
9. Seo, Ji-Yeon. Methimazole-Induced Bullous Systemic Lupus Erythematosus: A Case Report. Journal of Korean Medical Science. 2012;27(7): 818.
10. Khalil BR. Methimazole-Induced Myositis: A Case Report and Review of The Literature. Endocrinology, Diabetes and Metabolism Case Reports; 2013.
11. Shikha, D. Antineutrophilic Cytoplasmic Antibody Positive Vasculitis Associated with Methimazole Use. Case Reports in Endocrinology; 2015:1-3.
12. Thomas, Saly K, Sheffield JS, Roberts SW. Thionamide-Induced Neutropenia and Ecthyma in a Pregnant Patient with Hyperthyroidism. Obstetrics and Gynecology. 2013;122(2,2):490-2.

Cite this article as: Vibhashree GN, Anuradha HV, Kalra P. Methimazole induced lichenoid eruptions: an unusual case. Int J Basic Clin Pharmacol 2017;6:1535-7.