

STUDIES

KETOTIFEN IN THE TREATMENT OF SYMPTOMATIC DERMOGRAPHISM

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The efficacy of ketotifen, a benzocyclo heptathiophene derivative was evaluated in 24 patients with symptomatic dermographism in a double-blind cross-over study. Dermographism was induced by a device at two different pressures before, during and after ketotifen treatment. Symptomatic improvement was seen during ketotifen therapy, but no benefit was observed with the placebo. However lesions recurred few days after stopping the treatment.

Key Words : Ketotifen, Symptomatic dermographism

Introduction

Dermographism is an abnormal wealing response of the skin to moderate local trauma.¹ Symptomatic dermographism refers to dermographism accompanied by pruritus.² Classic dermographism is the ability of the skin to produce a linear weal with a scratch pressure of 4900 gm/cm.³ A significant number of patients with symptomatic dermographism are benefited by antihistaminics, whereas other therapeutic measures have revealed only variable results.⁴

Ketotifen⁵⁻⁷ an antihistaminic with antianaphylactic^{8,9} and calcium channel blocking properties⁸ is known to prevent mast cell degranulation¹⁰ and has been tried successfully in various mast cell mediated disorders.^{11,14} However, there are remarkably few studies advocating ketotifen in symptomatic dermographism.⁶ We report a double-blind, placebo-controlled, randomized clinical trial designed to evaluate the efficacy of the drug in 24 patients with symptomatic dermographism.

Materials and Methods

24 patients, 13 male and 11 female with a history of symptomatic dermographism not on any medication for the last 2 weeks and those who could come for follow up on 2nd, 4th, 8th weeks were studied. A detailed history was obtained and patients having other co-existent diseases were excluded. Dermographism measuring 10 cm in length was induced medial to scapula on either side with a calibrated springed stylus at pressures of 2500 gm/cm² (Grade I) and 4900 gm/cm² (Grade II).

Assessment of the weal was made after 7 minutes by examining the erythema, size, induration and the presence of itching. The size of the weal was measured in millimeters and mean of the three sites were taken. Induration was palpated and graded as minimum, moderate and marked.

The drug containing 1 mg of ketotifen,¹⁶ colour and size matched placebo were coded by a third person. Patients at random received either the drug or the placebo two tablets twice daily. All patients were assessed as outlined earlier, during and after treatment at 2nd, 4th and 8th week of starting the drug or the placebo. If there was no improvement with the

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first drug after 2 weeks the patients received the other drug for another 2 weeks. However those patients who improved after the initial drug, received the same treatment for another 2 weeks. Decoding of the tablets were done at the end of the study and the results were statistically analysed.

Results

The maximum patients with symptomatic dermographism were in the age group between 21-31 years and it persisted for variable periods.

Placebo was received by a total of 13 patients. None of these showed clinical improvement. Mean size of the weal was increased by 0.08 mm, however in one patient itching had decreased.

Similarly ketotifen was given randomly as the first drug to a total of 11 patients. 13 patients who failed to respond to placebo were subsequently administered ketotifen. Thus a total of 24 patients received the drug.

Dermographism induced at low pressure (Grade I) showed erythema in 19 patients only. It cleared in 7 cases (37%) during ketotifen treatment. The mean size of the weal was 3.25 mm. A reduction of 0.79 mm (24%) [$P < 0.05$] was noted. Moderate to marked induration of the weal observed in 12 cases were reduced to minimum.

Dermographism elicited at high pressure (Grade II) showed erythema in 22 patients. It cleared in 9 cases (41%) during ketotifen therapy. The mean size of the weal was 4.25 mm. It was reduced by 1.365 mm (33%) [$P < 0.05$]. Moderate to marked induration of the weal observed in 13 patients were reduced to minimum in 12 cases and no palpable weal was seen in one patient.

Itching completely subsided in 20 cases

(85%) and the same clinical response was maintained during entire period of treatment. Adverse effects¹⁰ of the therapy were unremarkable. Mild sedation and increased appetite were seen only in four patients during the initial days of treatment.

Follow up was done 2-3 days after discontinuing the drug and after 4th week and 8th week. All patient showed reappearance of the symptoms except one.

Comments

Ketotifen, an orally administered mast cell stabilizing agent, is beneficial in patients with symptomatic dermographism.^{6,15,17} It is an H_1 receptor antagonist with antianaphylactic properties and also acts as phosphodiesterase inhibitor. Phosphodiesterase which degrades cAMP is inhibited there by increasing mast cell intracellular cAMP levels and preventing histamine release induced by IgE or chemical stimuli. In addition ketotifen has calcium channel blocking properties and inhibits the release of mixture of leucotrienes known as slow releasing substances of anaphylaxis.

Our study showed marked clinical improvement, in all patients while they were taking the drug with minimal untoward effects. However loss of benefit became evident 2-3 days after stopping the drug. This shows that continuous medication is necessary. There are reports on its prolonged use⁶ without any side effects. Other dermatological disorders where ketotifen is indicated are chronic idiopathic urticaria, physical urticaria, urticaria pigmentosa^{11,12} bronchial asthma¹⁴ and patients with food allergy.

Considering its beneficial effects in symptomatic dermographism with negligible adverse effects it may be used in this condition either alone or as an adjuvant along with other antihistamines.

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