

ZYRTEC (CETIRIZINE) EFFECT ON ERYTHEMA AND WEAL INDUCED BY EPICUTANEUS SKIN PRICK TEST WITH HISTAMINE, ON HEALTHY ALBANIAN VOLUNTEERS

Kastriot Shytaj¹, Leonard Deda², Zhaneta Shytaj³, Ervin Marku⁴, Ervin Mingomataj⁵, Engjellushe Jonuzi⁶.

Rehabilitation, Technical Medical Sciences Faculty, Medical University, Tirana, Albania.

²Biomedical and Experimental Subjects Department, Faculty of Medicine, Medical University, Tirana, Albania.

³Ambulatory Service, Surgery Hospital, UHC "Mother Theresa", Tirana, Albania.

⁴Preclinical Subjects Department, Technical Medical Sciences Faculty, Medical University, Tirana, Albania.

⁵Clinic of Allergy and Clinical Immunology, UHC "Mother Theresa", Tirana, Albania.

⁶University Military Hospital, Tirana, Albania.

Abstract**Background**

Cetirizine is widely used to prevent the symptoms of allergies, especially in the skin, eye, and nose. Meanwhile Histamine Wheal and Flare inhibition is a standard biological test widely used to test the effect duration and intensity.

The aim of our study was to test the Histamine weal and flare inhibition by Zyrtec (Cetirizine) on Albanian healthy volunteers.

Method

This was an open, single dose, clinical study. 16 healthy volunteers, 5 males, with a mean age of 21+1 years participated in this study. After they received 10 mg of Zyrtec, they were tested with a skin prick test with Histamine on the forearm on thirteen occasions. Flare and weal were drowning in a transparent paper; twenty minutes after each skin prick test and the weal and flare surface were measured with software.

The data distribution were tested Shapiro-Wilk Test. Differences were analyzed with Wilcoxon Signed Ranks Test and all tests used were two-sided with significance at 5% level.

Results

The subjects have a significant inhibition of erythema only at skin prick test conducted at 1 hour post-dose ($p < 0.001$). The mean time of the maximal effect achieved was 9.4+7.8 hours. None of the volunteers achieved a totally inhibited erythema. Subjects had a significant weal inhibition at 40

minutes after dose ($p < 0.001$). The mean time of the maximal effect was 6.64+1.40. All the subjects achieved a totally inhibited weal.

Both the erythema and weal inhibition was significant even at 29 hours post dose ($p < 0.001$).

Discussion

The results confirmed that this product has pharmacodynamics very similar to those observed in analogue studies in other countries. As our market is full of many brands of different drugs at least for the antihistamines we may use the histamine weal and flare inhibition to evaluate its pharmacodynamical equivalence.

Key words: *cetirizine, histamine, pharmacodynamics, antihistaminics,*

Background

Cetirizine is a second generation antiH1s known to act as inverse agonist [1], and have a pharmacological effect of about 24 hours with lesser adverse effects than first generation antiH1s ancestors [2]. It is widely used to prevent the symptoms of allergies, especially in the skin, eye, and nose, substituting its first generation predecessors [2].

Histamine Wheal and Flare inhibition is a standard biological test widely used to test the antihistamine effect. It can test the effect duration and intensity at the same time.

It should be noted that this effect, at least for some