

**EVALUATION OF THE CLINICAL EFFICACY
OF
ALOMIDE (LODOXAMIDE 0.1%)
OPHTHALMIC SOLUTION IN ALLERGIC
AND VERNAL CONJUNCTIVITIS**

THESIS

**Submitted for Partial Fulfilment of the Master
Degree in Ophthalmic Medicine & Surgery**

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CAIRO-EGYPT

1993

الکتاب

- ۱- محمود حمزہ و اسرار اللہ رحمہ اللہ
۲- شریعہ محمدیہ و احکام اسلامیہ
۳- کتاب التوحید و التمسک بالحدود



***TO MY FAMILY
AND MY FIANCÉ***

ACKNOWLEDGMENTS

I wish to express my deep gratitude to **Prof. Dr. MAHMOUD HAMDI IBRAHIM** Professor of Ophthalmology and President of Research Institute of Ophthalmology for his valuable guidance and for his unlimited efforts which enabled me to obtain the drug.

I also address my sincere thanks to **Prof. Dr. SHAKER A. KHEDR** Professor of Ophthalmology, Faculty of Medicine, Ain Shams University for supervising the details of this work and for his encouragement and helpful criticism.

Also, I would like to thank **Dr. MAHMOUD A.M. ABD EL HAMID**, Lecturer of Ophthalmology, Faculty of Medicine, Ain Shams University, for his beneficial advice and help.

Gehan Naguib

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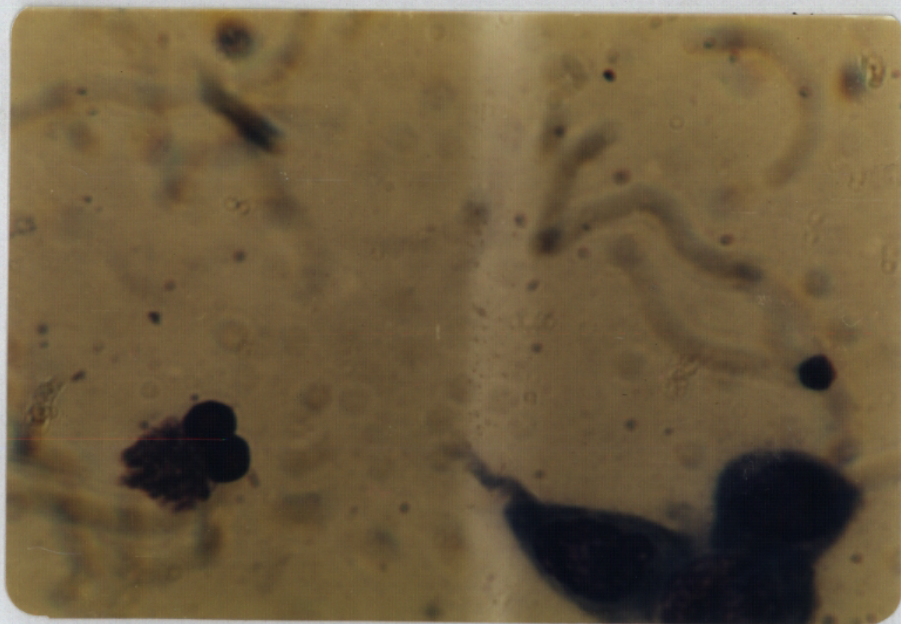
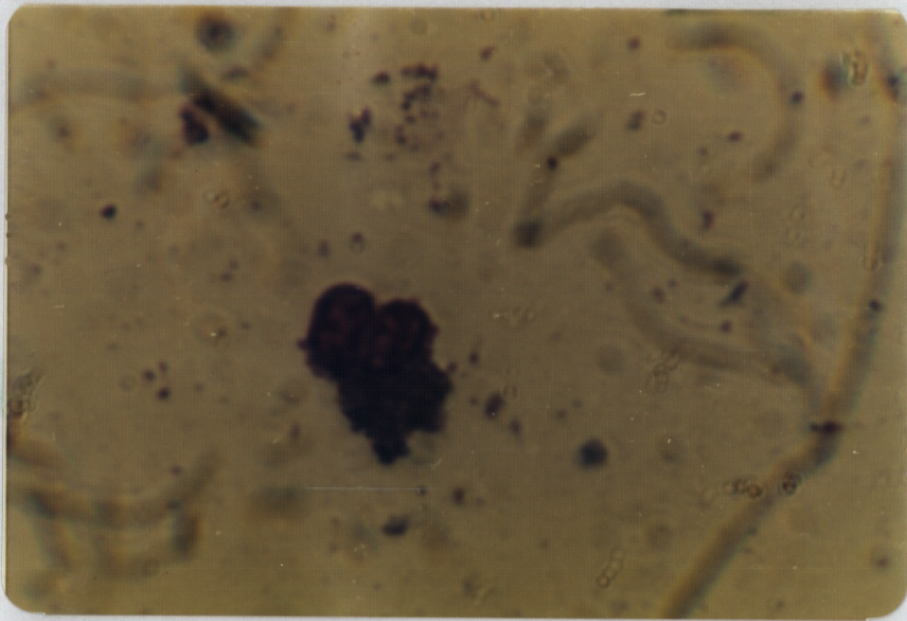


fig. I
Eosinophilic cell
(X 400 magnification)
(Stained by Leishman's stain)



REVIEW

INFLAMMATORY RESPONSE OF THE CONJUNCTIVA

The inflammatory response of the conjunctiva towards different irritants (microbiological organisms, trauma, foreign body, physical and chemical agents) shows different patterns as:

Hyperaemia:

Hyperaemia of the conjunctiva is the first response and is seen with all types of irritation and inflammation and it is due to dilatation of blood vessels (arteries, veins and capillaries) produced by chemical mediators (Histamine, serotonin, bradykinin and others). Passive hyperaemia also occurs most often in association with orbital and arteriovenous malformation. (**Wright, 1987**).

Oedema:

Oedema rapidly follows hyperaemia and varies greatly in amount depending on the type of inflammatory response, being greatest in IgE mediated hypersensitivity reactions due to release of histamine and serotonin from mast cells which increase capillary permeability by widening the tight junction between the endothelial cells allowing the passage of fluid and cells into the tissue. (**Yanoff and Fine, 1975**). Oedematous conjunctiva appears thicker and may bulge out

between the lids (chemosis), it is however, possible to see through the swollen conjunctiva and to observe the normal pattern of vessels within the conjunctiva (**Wright, 1987**).

The normal vascular pattern (as seen by Slit lamp) in palpebral conjunctiva: a fine, subepithelial vascular network with large vessels running at right angles to the lid margins, and in bulbar conjunctiva a superficial, bright red system of anastomosing vessels can be easily seen and they move with the conjunctiva and by more careful examination a deeply placed reddish - blue episcleral network of vessels can be seen and they do not move with the conjunctiva (**Snell and Lemp, 1989**).

Haemorrhage:

Haemorrhages may also occur as a result of the endothelial damage (**Wright, 1987**).

Cellularity:

Cellularity of the conjunctiva causes swelling and opalescence, which obscures first the deeper vessels and then the more superficial ones until finally only the surface pattern of the conjunctiva is recognizable, usually thrown up into an exaggerated variation of the normal (**Wright, 1981**).

These superficial changes are the classic papillary and follicular responses which need to be carefully differentiated

for diagnostic purposes.

Papillae:

The normal conjunctiva contains fine vascular tufts which run vertically to the surface and become dilated and obvious in the early stages of inflammation. Following more prolonged irritation or inflammation, the vessel tufts become the central core of thickened polygonal tufts of tissue known as papilla. Variable degrees of cellular infiltration occur within these papillae and also, with time hyalinization, to produce the typical chronic compound papilla seen in vernal conjunctivitis (**Wright, 1987**).

Follicles:

Follicles are clear white or yellow aggregations of lymphoid tissue found within the epithelium and having blood vessels around their periphery rather than centrally. Lymphoid tissue is absent from the conjunctiva at birth and rapidly develops within the first few weeks of life in response to exogenous antigenic stimuli. Thereafter resting nests of lymphoid cells remain within the normal conjunctiva but are quickly activated by any topical stimulus such as molluscum virus or drugs like eserine (**Wright, 1987**).

Finally, the fluid transudates within the tissue, with inflammatory cells and desquamated epithelial cells, combine to make the discharge that is the usual

accompaniment of conjunctivitis and which when examined cytologically as a conjunctival smear under the microscope, yields valuable clues to diagnosis of the type of conjunctivitis (**Friedlaender et al., 1984 - Wright, 1987**).

LABORATORY AIDS TO DIAGNOSIS OF EXTERNAL EYE DISORDERS

Aids of value to diagnose external eye diseases are secretion films, epithelial scrapings and bacterial culture. more specific methods are viral isolation, viral serology and chlamydial serology (**Wright, 1987**).

Epithelial scraping is so benefit to show the cellular response of the conjunctiva and differential diagnosis of eye cellular response is shown in table (1).

Table (1): Differential diagnosis of each cellular response:

Cells	Differential diagnosis
Polymorphonuclear response	Bacterial, Fungal, Neonatal chlamydial, severe membranous conjunctivitis
Mixed polymorph and lymphocytic response	Adult chlamydial infections
Lymphocytic response	Adenovirus, Herpes simplex, Epidemic haemorrhagic K.C., Molluscum, Toxic conjunctivitis from medication.
Mixed polymorph and lymphocyte response with plasma cells, Leber cells, giant cells and cytoplasmic inclusions	Established chlamydial infections
Eosinophils	Vernal disease, Atopic K.C, Hay fever conjunctivitis, Mucous membrane pemphigoid.
Kiratinized cells	Conjunctival epidermalization, Dry eye Xerophthalmia, Established mucous membrane pemphigoid

Wright, (1987)

Conjunctival eosinophilia is usually considered to be a sign of some sort of allergy of which atopic allergy is the most common form (**Tsubato et al., 1991 - Kari and Haahtela, 1992**).

Thygeson and Kimura (1963) found eosinophils in conjunctival scrapings in patients suffering from chronic conjunctivitis and among these, a non atopic subgroup, which they called non specific allergic conjunctivitis. Eosinophils can also be found in conjunctival delayed hypersensitivity reactions (**Kari and Haahtela, 1992**).

Eosinophilia is helpful for diagnosis and self modulation of allergic conditions as eosinophils produce certain enzymes such as histaminase and arylsulphatase, which antagonise the effect of allergic mediators (**Abdel Gany et al., 1991**).