

Original Research

Association of Acne vulgaris with ocular dryness

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ABSTRACT:

Background: Acne vulgaris is a chronic inflammatory disease of pilosebaceous units in different skin areas, especially the face. The present study was conducted to assess association of Acne vulgaris with ocular dryness. **Materials & Methods:** 72 patients with acne vulgaris and ocular dryness of both genders were enrolled. Schirmer's test, tear film breakup time (TBUT), tear film height, presence of conjunctival injection, punctate epithelial erosions (PEE), and meibomian gland dysfunction (MGD) were performed in all patients. **Results:** Out of 72 patients, males were 40 and females were 32. Common complaints were watering & burning eyes in 22, foreign body sensation in 14, itching in 6, redness in 18 and on off vision blurring in 2 patients. Corneal findings were lustreless in 52, clear cornea in 16 and punctate lesions & lustreless cornea in 4 patients. The difference was significant ($P < 0.05$). **Conclusion:** High prevalence of ocular findings in patients with acne vulgaris. Corneal findings were lustreless, clear cornea and punctate lesions & lustreless cornea.

Key words: Acne vulgaris, Burning eyes, Ocular dryness

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INTRODUCTION

Acne vulgaris is a chronic inflammatory disease of pilosebaceous units in different skin areas, especially the face. The disease often occurs in adolescents, but it can also be seen in adults. The disease, which is seen in 85% of individuals between the ages of 12-24 years, is the most common dermatosis in the young population. Moderate and severe acne vulgaris is observed in 15-20% of individuals in this population and significantly affects their quality of life by disrupting individuals' social interactions.¹

Acne vulgaris is a common skin disease with prevalence reaching up to 80% during adolescence. It has a complex aetiology, involving abnormal keratinisation, hormonal function, bacterial growth, and immune hypersensitivity of pilosebaceous follicles of the head and upper trunk.² The primary acne lesion is the "blackhead", an impaction and distension of the follicle with improperly desquamated keratinocytes and sebum. At puberty, when androgens stimulate the production of sebum, pre-existing comedones become filled with lipid and may enlarge to become visible.³

The most common adverse reactions observed during systemic acne treatment are mucocutaneous and

ophthalmological. Ocular side effects associated with systemic acne treatment particularly with oral isotretinoin usage were investigated many times. These undesired ocular side effects include dry eye, blepharoconjunctivitis, corneal opacities, abnormal meibomian gland secretion, conjunctival epitheliopathy, photophobia, and teratogenic ocular abnormalities.⁴ The present study was conducted to assess association of Acne vulgaris with ocular dryness.

MATERIALS & METHODS

The present study comprised of 72 patients with acne vulgaris and ocular dryness of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Schirmer's test, tear film breakup time (TBUT), tear film height, presence of conjunctival injection, punctate epithelial erosions (PEE), and meibomian gland dysfunction (MGD) were performed in all patients. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 72		
Gender	Males	Females
Number	40	32

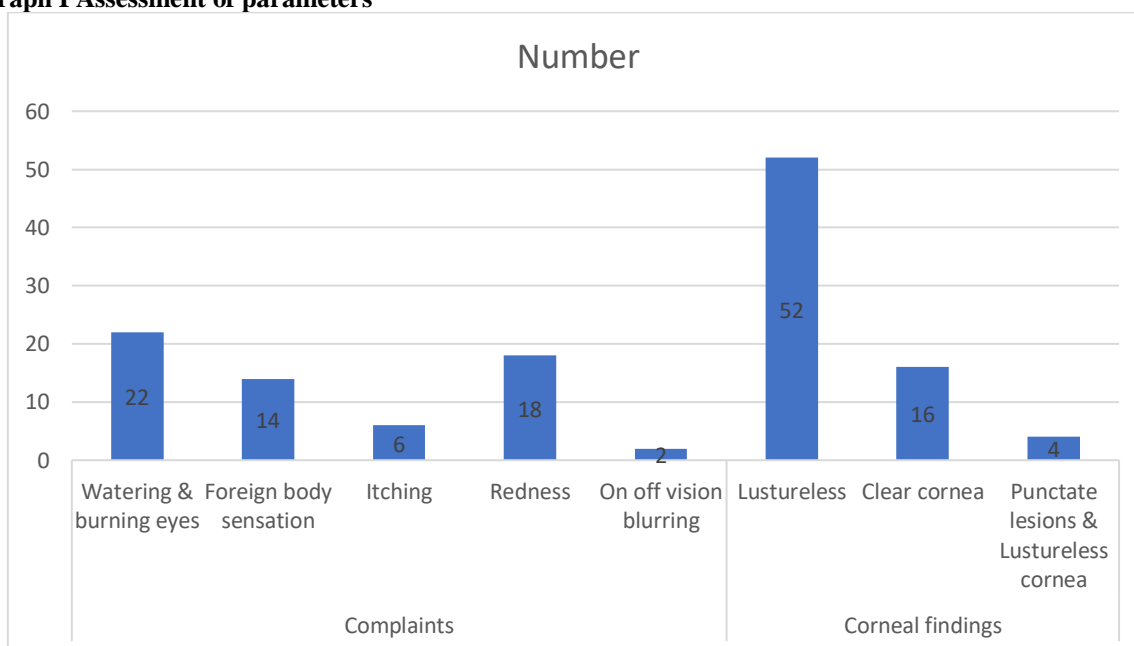
Table I shows that out of 72 patients, males were 40 and females were 32.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Complaints	Watering & burning eyes	22	0.05
	Foreign body sensation	14	
	Itching	6	
	Redness	18	
	On off vision blurring	2	
Corneal findings	Lustureless	52	0.02
	Clear cornea	16	
	Punctate lesions & Lustureless cornea	4	

Table II, graph I shows that common complaints were watering & burning eyes in 22, foreign body sensation in 14, itching in 6, redness in 18 and on off vision blurring in 2 patients. Corneal findings were lustureless in 52, clear cornea in 16 and punctate lesions & lustureless cornea in 4 patients. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

Acne vulgaris is a chronic inflammatory disease of the pilosebaceous unit resulting from several interacting pathophysiologic factors. Among these, sebaceous gland hyperplasia with hyperseborrhea, abnormal keratinization with subsequent blockage of pilosebaceous ducts, bacterial colonisation of hair follicles by *Propionibacterium acnes* and inflammation are the most notable factors that contribute to acne development.⁵Inflammatory acne is the result of the host response to the follicular inhabitant *Propionibacterium acnes*.⁶ *P. acnes* also activate complement and are generally inflammatory when brought into contact with the immune system. Non-ocular other disorders such as rosacea

are often associated with MGD. This chronic inflammatory skin condition is found in areas with a dense distribution of sebaceous glands, and is more common during periods of increased sebum production.⁷

The available topical and systemic treatment options (medical treatment, lasers, light therapy) aim to interrupt the formation of the non-inflammatory lesions, inflammation, bacterial colonization and prevent complications including acne scars.⁸ Medical treatment regimens with these targets are composed of retinoids and antibiotics. Retinoids are important tools in the management of acne because they act against all major etiologic factors implicated in acne including abnormal keratinisation, the

microcomedones and are also anti-inflammatory.⁹ Besides this, antibiotics are known to be the most effective therapy for inflammatory type of acne but due to potential for bacterial resistance, side effects and to increase efficacy usually combined therapy with retinoids is recommended.¹⁰ The present study was conducted to assess association of Acne vulgaris with ocular dryness.

In present study, out of 72 patients, males were 40 and females were 32. Ozdemir et al¹¹ evaluated the ocular surface features, meibomian glands, and tear parameters of patients with acne vulgaris. The right eyes of 70 individuals (34 patients with acne vulgaris, 36 healthy volunteers) were evaluated. The tear break-up time of participants was measured, and the Schirmer test was performed. Then, to determine ocular surface characteristics, samples were taken from the conjunctiva for impression cytology. Tear break-up time was significantly lower in the study group compared to the control group ($p < 0.001$). No statistically significant difference was determined between the groups in respect of Nelson grade in the conjunctival impression cytology ($p = 0.141$). Grade 3 cytological changes were not observed in either group. The median value of the loss rate in the meibomian glands in the upper eyelid of patients with acne vulgaris was 19.10% (IQR: 18%), while it was 8.75% (IQR: 9.53%) in the control group ($p = 0.001$). The median value of the loss rate in the meibomian glands in the lower eyelid was 15.70% (IQR: 15.13%) and 7.70% (IQR: 6.53%) in the acne vulgaris and control groups, respectively

We found that common complaints were watering & burning eyes in 22, foreign body sensation in 14, itching in 6, redness in 18 and on off vision blurring in 2 patients. Corneal findings were lustreless in 52, clear cornea in 16 and punctate lesions & lustreless cornea in 4 patients. De Queiroga et al¹² investigated the effects of isotretinoin treatment on the ocular surface in patients with acne vulgaris, it was found that 100% of superior and 75% of temporal conjunctival impression cytology samples, showed normal cytological findings before treatment (at baseline).

CONCLUSION

Authors found that high prevalence of ocular findings in patients with acne vulgaris. Corneal findings were lustreless, clear cornea and punctate lesions & lustreless cornea.

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