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Lifitegrast Ophthalmic Solution – A Review

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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Short Communication

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ABSTRACT

Introduction: In this review article the safety and efficacy of of Lifitegrast™ in the management of dry eye disease is described.
Methods: Search was carried out using related search terms in data bases like pubmed and related articles were referred.
Result: A larger reduction in Eye dryness Score (EDS) was seen with Lifitegrast™.
Conclusion: Lifitegrast™ ophthalmic solution 5% provides a new option for the treatment of dry eyes.

Keywords: Lifitegrast™; eye dryness; drug complication.

1. INTRODUCTION

Lifitegrast™ is approved by USFDA on June 2016 to treat signs and symptoms of the dry disease. It belongs to lymphocyte associated antigen-1 (LFA-1) antagonist. Lifitegrast™ reduces the swelling in the eye tissues.

2. INDICATIONS

It is indicated in treatment of dry eye disease.

3. DOSAGE FORMS

Ophthalmic solution containing lifitegrast™ 5% (50 mg/mL).

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4. MECHANISM OF ACTION

A cell surface protein found on leucocytes which is an integrin lymphocyte function-associated antigen-1 (LFA-1). Lifitegrast™ binds to LFA-1 and blocks the interaction of LFA-1 with its ligand ICAM-1(intracellular adhesion molecule-1). Interaction of LFA-1/ICAM-1 leads to formation of an immunological synapse resulting in T-cell activation and migration to target tissues [1].

5. NONCLINICAL TOXICOLOGY

Carcinogenesis – Studies have not been conducted in the animals to assess the carcinogenicity.

6. MUTAGENICITY

Lifitegrast™ was not found to be mutagenic invitro assay.

7. IMPAIRED FERTILITY

Lifitegrast™ had no effect on fertility and reproduction in male and female treated rats after administering intravenous doses of lifitegrast™ at 30mg/kg/day [2].

8. ADVERSE EFFECTS

The most common adverse effects commonly reported in a study with 1401 patients 5-25% of them had instillation site irritation, reduced visual acuity and dysgeusia. Other 1-5% of patients experienced headache, blurring of vision, eye pruritis with sinusitis [3].

9. DRUG INTERACTIONS

No significient interaction with other drugs.

10. USES IN SPECIFIC POPULATION: PREGNANCY

There are no data available for studies related to pregnant women. Lifitegrast™ administered to rats during their gestational period did not produce any embryofetal defects [4]. When given to pregnant rabbits there were increased incidence of omphalocele at the lowest dose tested, 3mg/kg/day [1].

11. LACTATION

There are no reliable data available on presence of lifitegrast™ in breast milk.

12. PEDIATRIC POPULATION

Safety and efficacy of Lifitegrast™ in pediatric patients below the age of 17 years have not been established [1].

13. GERIATRIC

overall there is no difference in safety or effectiveness of Lifitegrast™ between elderly and younger adult patients [1].

14. CLINICAL STUDIES

Totally 1181 patients were recruited to study the safety and efficacy of Lifitegrast™ for the treatment of dry eyes. The study was conducted for 12 weeks and it was a randomized, multi-centre, double blinded trial. Patients were randomization in 1:1 ratio and received either Lifitegrast™ or placebo. patients were dosed twice a day and use of artificial tears was not allowed.

Eye dryness Score (EDS) was assessed by patients using a visual analogue scale (VAS) (0 = no discomfort, 100 = maximal discomfort) during each study visit. The average baseline EDS was between 40 and 70. A larger reduction in EDS favouring lifitegrast™ was observed in all studies at Day 42 and Day 84 [5].

15. CONCLUSION

Lifitegrast™ ophthalmic solution 5% provides a new option for the treatment of dry eyes.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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