

Lifitegrast Ophthalmic solution – A review

ABSTRACT:

Introduction: In this review article the safety and efficacy 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.

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.

Indications: It is indicated in treatment of dry eye disease.

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

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 tissues¹.

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

Mutagenicity -Lifitegrast™ was not found to be mutagenic invitro assay.

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/day⁵.

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 sinusitis².

Drug interactions: No significant interaction with other drugs

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 defects³. When given to pregnant rabbits there were increased incidence of omphalocele at the lowest dose tested, 3mg/kg/day¹.

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

Pediatric population - Safety and efficacy of Lifitegrast™ in pediatric patients below the age of 17 years have not been established¹.

Geriatric – overall there is no difference in safety or effectiveness of Lifitegrast™ between elderly and younger adult patients¹.

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 randomized 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 84⁴.

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

Ethical Approval:

As per international standard or university standard ethical approval has been collected and preserved by the authors.

Conflict of interest: Nil

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly used products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

Reference:

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