



Ophthalmic Drugs – Data, Analysis and Forecasts to 2024

*Pharmaceutical, Commercial & Strategic Developments in the Global Ophthalmology Market
to 2024*



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Causes of Uveitis:

Infectious causes	Non-infectious/ autoimmune causes
<ul style="list-style-type: none"> ▪ Lyme disease ▪ Syphilis ▪ Toxocariasis ▪ Tuberculosis ▪ Brucellosis ▪ Leptospirosis 	<ul style="list-style-type: none"> ▪ HLA-B27 related uveitis ▪ Fuchs Heterochromic Iridocyclitis (FHI) ▪ Sympathetic Ophthalmia (SO)

Treatment:

Uveitis treatment differs on a case by case basis, typical treatments include:

- Glucocorticoid steroids (e.g. Indomethacin/Methotrexate)
- Oral therapy
- Topical eye drops
- Injection in or around eye depending on the severity of the inflammation

Ophthalmic Anti-inflammation Market – Global

- Globally less than a million people are affected with uveitis, and in the US alone it affects less than 200,000 people.
- Uveitis occurs in males and females in equal numbers.
- Uveitis is common between the ages of 20 and 60.
- Anterior uveitis is the most common uveitis, affecting more than 75% of the uveitis cases worldwide.

Table 2.4.5.1: Major Ophthalmic Anti- inflammation Drugs

Drug	Drug Type	Generic Name	Company	Therapeutic Class
Bromday	Non-steroidal anti-inflammatory drug (NSAID)	Bromfenac	ISTA Pharmaceuticals	Eye drop
Nevanac	(NSAID)	Nepafenac	Alcon, Inc.	Eye drop
Acular	(NSAID)	Ketorolac tromethamine	Allergan, Inc.	Eye drop
Restasis	Immunosuppressive agent	Cyclosporine	Allergan, Inc.	Eye drop

Profenal	(NSAID)	Suprofen	Alcon Laboratories, Inc.	Eye drop
Ocufen	Sterile topical nonsteroidal anti-inflammatory product	Flurbiprofen sodium	Allergan, Inc.	Eye drop
Voltraren Ophthalmic	(NSAID)	Diclofenac ophthalmic	Novartis	Eye drop
Xibrom	(NSAID)	Bromfenac	ISTA Pharmaceuticals, Inc.	Eye drop

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2.4.6 Ophthalmic Infections

Many of the viruses, bacteria, parasites, and fungi that can attack the human body and are also capable of attacking the surface or interior of the eye.

Types of ophthalmic infections:

- **Blepharitis** - is a non-contagious disorder that affects all ages and both men & women. Blepharitis is an inflammation of the eyelids which causes the eyelids to become reddened, swollen or itching. Symptoms can include eye dryness due to the inflammation of moisture producing tissues.

Blepharitis presents in two forms;

- **Anterior Blepharitis:** affects the outside front edge of the eyelid.
- **Posterior Blepharitis:** affects the meibomian glands.
- **Corneal opacities** – occurs after injury to the cornea. Once an injury occurs, bacteria begin attacking the wound, which leads to infection and corneal ulcers.
- **Trachoma** – is caused by the chlamydia trachomatis bacterium which produces a characteristic roughening of the inner surface of the eyelids. It spreads through contact with eye discharge from an infected person.

Chapter 5: Ophthalmic Anti-Allergy / Inflammatory / Infective Market 2014 - 2024

Primarily itchy eyes, unusual puffiness around eyes, redness or a burning sensation within the eye are caused by allergy, inflammation or infection. Allergies/inflammations/infections are treated with anti-infective, anti-allergy and anti-inflammatory drugs.

Anti-infective drugs are frequently used to treat bacterial, viral and, less commonly, fungal infections of the eye. Anti-inflammatory drugs are also used to treat the redness and puffiness of the eyes that may develop as a result of infection, allergic reactions, or autoimmune disorders in which the immune system attacks the body's own tissues. Anti-allergy drugs are commonly used to treat allergy reactions primarily caused from insect stings or pollen. Minute amounts of an allergen may be used to pacify a person who has a severe allergy to a particular substance. The treatment is usually given as a series of weekly injections containing gradually increasing doses.

5.1 Key Trends / Issues in the Global Anti-allergy / Inflammatory / Infective Market

- **Quality of life** - Allergic eye diseases are one of the fastest growing health problems worldwide. The cause of an allergic eye disorder, such as conjunctivitis, is due to the reaction of a patients' immune system to an allergen. Allergic conjunctivitis is common in people who have other allergic disease such as hay fever, asthma and eczema.

Due to ever changing life styles increasing numbers of people are exposed to common allergens that cause conjunctivitis, such as; pollen from trees, grass and ragweed; animal skin & hair; secretions such as saliva; perfumes, cosmetics, skin medicines, air pollution, smoke, dust mites etc. Increasing pollution in urban areas is also a major cause of eye infections / irritations.

- **Increasing Number of Eye Allergy / Inflammatory / Infection cases:** In the US alone approximately 25m people are affected from various eye allergies every year. Globally 100m people are affected from eye allergy every year. Uveitis occurs most frequently in people ages 20 to 50. It is estimated that more than 300,000 people in the US are affected by uveitis each year. The increase in the number of cases will drive the market for drugs across our forecast period.
- **Increased exposure to pets:** In the US alone more than 35% of allergies are caused due to pets/animal skin and their secretions, such as saliva.
- **Increased use of contact lenses:** More than 55% of people that use contact lenses suffer from an eye allergy. Allergens can be trapped under a contact lens, prolonging the contact with the ocular surface, and potentially causing infection. Globally more than 125m people wear contact lenses

- **R&D pipeline:** There are number of ophthalmic drugs in phase 2 and 3 stages for the treatment of eye allergy, inflammatory and infective conditions. It is expected that these drugs will hit the market post 2014.

Key ophthalmic drugs in the R&D pipeline are:

Table 5.1.1 Ophthalmic Anti-Allergy/Inflammation/Infective R&D Pipeline

Manufacturer/Drug Name	Indication	Phase
Nova Bay Pharmaceuticals, Inc. (NVC 422)	Adenoviral conjunctivitis	Phase 2
Foresight Biotherapeutics (FST-100)	Adenoviral conjunctivitis	Phase 3
ESBA105	AMD, non-infective inflammatory diseases	Phase 2
Bausch+Lomb (Mapracorat)	Anterior segment condition, symptoms of allergic conjunctivitis	Phase 3
InSite Vision (Dexasite)	Symptoms of non-infectious blepharitis, blepharo conjunctivitis	Phase 3
InSite Vision (AzaSite Plus)	Blepharitis	Double Phase 3

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5.2 Market Size & Forecast

The global ophthalmic anti-allergy/inflammatory/infective drug market is primarily dominated by the US and Japan because of the large number of pollen, bacterial and infective cases in these countries, alongside a mature healthcare system. The global ophthalmic anti-allergy/inflammatory/infective drug market is diverse, with a large number of companies that bring their products to the market.

Alcon is the only company which dominates the global ophthalmic anti-allergy/inflammatory/infective drug market and accounts for more than 22% of global ophthalmic drug sales. Patanol, Vigamox, TobraDex and Pataday by Alcon will account for approximate sales of \$1.3bn during 2013, making Alcon the market leader in this category.

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