



INFECTIONS OF THE VISUAL ORGAN AND THEIR TREATMENT METHODS

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Abstract: This article examines infectious diseases of the visual organ, their etiology, clinical symptoms, diagnostic methods, and modern treatment approaches. Eye infections are most often caused by bacteria, viruses, fungi, and parasites. The article analyzes common infections such as conjunctivitis, keratitis, and blepharitis, as well as the treatments applied for their diagnosis and management.

Keywords: eye infections, conjunctivitis, keratitis, blepharitis, antibiotics, antiviral therapy, antifungal agents, diagnosis.

INTRODUCTION

Eye infections are among the pathologies that can seriously damage human vision. These infections often arise due to external environmental factors, decreased immunity, poor hygiene practices, and chronic diseases.

The primary causes of eye infections include bacterial infections such as *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Pseudomonas aeruginosa*. Viral infections like *Herpes simplex virus (HSV)* and adenoviruses, fungal infections like *Candida albicans*, *Aspergillus*, and parasitic infections caused by *Acanthamoeba* are significant contributors.

Eye infections not only reduce the quality of life but, in late-diagnosed cases, may lead to blindness.

METHODS

The following methods were used in this research:

1. **Literature Analysis:** Recent scientific articles and data from the World Health Organization (WHO) were reviewed to study the types of eye infections and treatment strategies.
2. **Clinical Observations:** Clinical signs of infections and treatment effectiveness were analyzed based on observations of 50 patients at an ophthalmology center in Termez.
3. **Laboratory Studies:** Bacteriological culture, polymerase chain reaction (PCR), and microscopic examinations of biological materials were conducted.





RESULTS

The study identified the most common eye infections and analyzed their specific characteristics:

1. Conjunctivitis

- **Prevalence:** The most widespread infection, with 45% of observed cases.
- **Bacterial Conjunctivitis:** Detected in 40% of cases, predominantly caused by *Staphylococcus aureus* and *Streptococcus pneumoniae*. Symptoms included redness, purulent discharge, and eyelid swelling.
- **Viral Conjunctivitis:** Adenovirus-induced cases constituted 30% of observations. Symptoms included watery discharge, photophobia, and preauricular lymphadenopathy.
- **Management:** Rapid improvement was observed with topical antibiotics for bacterial cases, while antivirals such as Acyclovir reduced symptoms in viral cases.

2. Keratitis

- **Incidence:** Occurred in 25% of patients, with fungal keratitis accounting for 10% of cases.
- **Etiology:** Fungal infections caused by *Candida albicans* and *Aspergillus* species were prominent in patients using contact lenses improperly.
- **Clinical Presentation:** Symptoms included severe pain, corneal opacity, and decreased visual acuity.
- **Treatment:** Voriconazole and Natamycin-based therapy showed 85% effectiveness in fungal keratitis, while bacterial keratitis responded well to Moxifloxacin drops.

3. Blepharitis

- **Frequency:** Found in 20% of cases, often associated with poor eyelid hygiene.
- **Causative Agents:** Included *Staphylococcus epidermidis* and *Demodex* mites.
- **Symptoms:** Eyelid margin inflammation, scaling, and itching.
- **Intervention:** Improved hygiene and topical antibiotics resulted in significant improvement within two weeks.

Additional Findings:





- **Delayed Diagnoses:** 30% of patients presented with advanced-stage infections, leading to prolonged treatment durations.
- **Recurrence Rates:** Patients with underlying conditions such as diabetes experienced a recurrence rate of 15%.

DISCUSSION

The study results highlight the widespread occurrence of eye infections and the importance of early detection. While bacterial conjunctivitis can be treated within a short period using antibiotic drops, viral and fungal infections often require prolonged therapy.

Poor hygiene practices and improper use of contact lenses were identified as primary factors contributing to the development of keratitis.

RECOMMENDATIONS

1. Conduct awareness campaigns on eye hygiene among the population.
2. Ensure strict adherence to hygiene practices when using contact lenses.
3. Emphasize the necessity of consulting an ophthalmologist upon noticing symptoms of eye diseases.

CONCLUSION

Eye infections remain a pressing issue in modern medicine, and timely diagnosis and proper treatment are crucial for preserving vision. Studies show that early diagnosis and advanced treatment methods reduce complications from infections.

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