EyeYon Medical Ltd. is a pioneer in ophthalmologic medical devices, focusing on developing cornea-focused sight-saving solutions for more than a decade. Our innovative technologies are targeted to preserve the vision of millions of patients worldwide.
Unmet Clinical Need

The use of drops to administer drugs is age old and carries with it many disadvantages. Only ~5% of the eye drop substance reaches the target organ. This low bioavailability often dictates frequent administration and a prolonged healing process.

Hyper-CL™ technology meets this urgent need as it is the only drug reservoir contact lens.

Hyper-CL™ is a soft Therapeutic Contact Lens which also serves as a drug reservoir platform. The Hyper-CL™ increases eye drop contact time on the cornea and facilitates faster and better cornea healing. The innovative lens is based on patented technology from EyeYon Medical.

The lens special design enables capturing and maintaining any drop applied on the contact-lens surface. Its advanced design was found to be clinically beneficial in the treatment of multiple indications, making it a single technology that can treat various conditions. It is an approved treatment for corneal edema, corneal erosion, entropion, bullous keratopathy, Bacterial Keratitis, etc. The lens can also support treatment in post-surgical interventions and provides structural support in corneal dystrophies.

Proven Success for Multiple Indications

Hyper-CL™ is the only indicated solution for relief of corneal edema symptoms. The Hyper-CL™ showed superiority over regular bandage contact lenses in terms of reducing cornea thickness. Additionally, it was clinically shown that up to 50% of patients will benefit from a significant visual acuity improvement, leading to a substantial increase in quality of life.

Hyper-CL™ Therapeutic Soft Contact Lens is designed to increase contact time of eye drops on the corneal surface. Its design includes dual base curves, fenestrations, and a reservoir. This design forms a cavity between the lens and the cornea, in which the instilled eye drops are trapped, extending contact time with the cornea.

The fenestrations improve drug accessibility to the epi-corneal space, as well as tear mixing while preserving oxygen permeability to the cornea.

Mechanism of Action

Hyper-CL™ Therapeutic Soft Contact Lens is intended for short-term wear (up to 7 days) to promote corneal healing and relieve corneal pain by protecting the cornea during the treatment of acute or chronic pathologies, such as corneal edema, corneal erosions, entropion, bullous keratopathy and corneal dystrophies, as well as post-surgical conditions resulting from cataract extraction and corneal surgery. To increase the therapeutic effect, use of the Hyper-CL™ Therapeutic Soft Contact Lens in conjunction with an ophthalmic solution is recommended.

Hyper-CL™ Therapeutic Soft Contact Lenses can provide optical correction during healing, if required.

1 Using a paired t-test for the unadjusted mean difference
2 In the USA, the Hyper-CL™ is indicated for daily wear and is not indicated for use with ophthalmic solutions
Company Background

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Hyper-CL™
Lens Design

Bacterial Keratitis PMS using Hyper-CL™
Single-Center in India
Bacterial Keratitis is a severe bacterial infection of the cornea which can, in severe cases, cause loss of vision. A particular feature of Bacterial Keratitis is its rapid progression; corneal destruction may be complete in 24-48 hours with some of the more virulent bacteria. Early treatment is crucial to minimizing any visual-threatening sequelae.

Topical antibiotic eye drops are the preferred method of treatment in most cases. Antimicrobial ointments lack solubility, and their penetration into the cornea is limited.

Hyper CL™ is first-of-its-kind Therapeutic Contact Lens that also acts as a reservoir for therapeutics. Our study objective was to compare the efficacy of the Hyper-CL™ Therapeutic Contact Lens and antibiotic (Hyper-CL™ group) with a conventional antibiotic alone (Control group) in treating Bacterial Keratitis.

A randomized open-label clinical trial using Hyper-CL™ therapeutic contact lens to treat Bacterial Keratitis study was conducted by Prof. Lional Raj from Dr. Agarwal’s Eye Hospital & Research Institute in Tirunelveli, India during 2019-2020.

Thirty-five (35) patients diagnosed with Bacterial Keratitis were randomized into two groups; 17 patients were treated with the Hyper-CL™ and antibiotics; the control group was composed of 18 patients who received only topical antibiotics. Patients were treated with the Hyper-CL™ lens for a minimum of 48 hours.

In the Hyper CL™ treated group, we saw significant improvement in both pain level and severity of the infiltrate.

The pain was reduced by 4.77 points in the Hyper-CL™ group, and only by 1.89 points in the control group on Day-1 (p<0.001).

By Day-3, the pain was reduced by 6.12 points in the Hyper-CL™ group and 3.89 points in the control group (p<0.0001).

The Hyper-CL™ group subjects were completely pain-free by Day-5.

Infiltrates significantly improved in the first 12 hours of treatment at the Hyper-CL™ group. The average resolution of infiltration in the Hyper-CL™ group was 0.27 mm, and in the control group (antibiotic only), only 0.04 mm (p=0.02).

On Day-5, infiltrate resolved by a mean of 2.45 mm in the Hyper-CL™ group, whereas in the control group, only by 1.50 mm (<0.0001).

Mean BCVA also improved faster in the Hyper-CL™ group than in the control group. No serious adverse events occurred while using the Hyper-CL™.

Results Summary

Conclusions
The severity of Bacterial Keratitis significantly improved within the first 1-3 days of treatment with Hyper-CL™ and antibiotics, compared with the control group where improvement was slower over time.

Using Hyper-CL™ Therapeutic Contact Lens extends direct contact time between the drugs and the cornea.

The use of Hyper-CL™ demonstrated:

- Better & Faster healing of the cornea
- Significant improvement in pain
- Earlier Vision recovery
- Reduced treatment burden

No serious adverse events occurred while using the Hyper-CL™.
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