



# NEW OPPORTUNITIES OF USING THERAPEUTICAL CONTACT LENSES IN OCULAR SURGERY

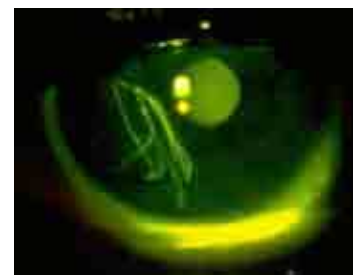
*Authors: Prof univ. dr. Adriana Stănilă, Dr. Elena Mihai, Dr. Adrian Teodoru, Dr. Ionuț Costache*

*The Clinical Department of Ophthalmology, Hospital Sibiu*

*The Faculty of Medicine Victor Papilian – Sibiu*

*The Research Center of the Ocular Surface – “Lucian Blaga” University, Sibiu*

# INTRODUCTION



- *therapeuein*”<sub>greac</sub> = *heal, treat*
- Therapeutic contact lenses are special contact lenses used for the treatment of the ocular surface diseases



# INDICATIONS OF THERAPEUTIC CONTACT LENSES AFTER OCULAR SURGERY

- small penetrating corneal wounds
- large corneal wounds without endocular membrane issue until suture
- aphakic and pseudophakic bullous keratopathy;
- large filtration bulla after trabeculectomy with athalamia;
- corneal graft after alkali burns
- after photorefractive keratectomy for antialgic effect and restoration of binocularity



We used TCL for next purposes:

**1. Pain relief**

- Edemato-bullous keratopathy
- Recurrent corneal erosion or corneal ulceration after corneal foreign body
- Herpetic keratopathy
- Corneo – conjunctival burns

**2. Improving corneal re-epithelization**

- Recurrent corneal erosions
- Exposure keratopathy
- Corneal burns
- Chronic corneal ulcerations
- Neurotrophic keratopathy

**3. Tectonic effect**

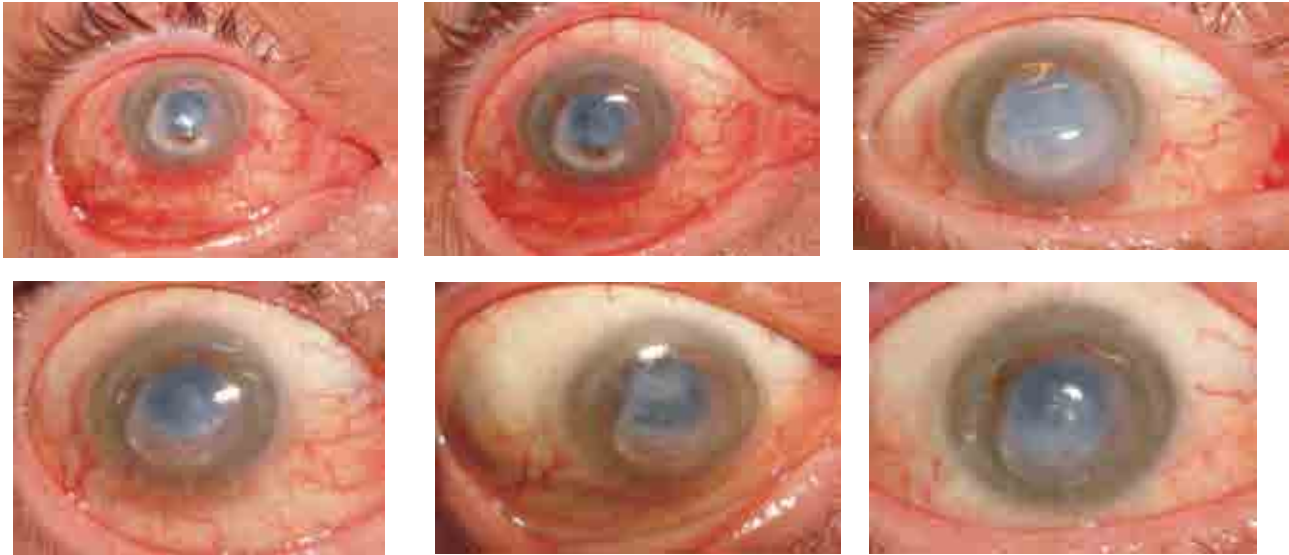
- Descemetocel after corneal ulceration
- Corneal – and corneoscleral laceration without endocular membrane issue

**4. Permitting binocular vision**

- All cases



# OCULAR PATHOLOGY - TCL USED FOR WOUND HEALING – DESCEMETOCEL



- C.I., 49 years old – LE: neurotrophic keratopathy stage 3 (corneal perforation), after recurrent herpetic keratitis
- The topic treatment consisted of nonsteroidian anti-inflammatories, antivirals, corneal trophics, therapeutic contact lens – no success
- It was necessary to apply a multistratified amniotic membrane to cover the perforation and other amniotic membrane transplant fixated with TCL



# OCULAR PATHOLOGY - TCL USED FOR OCULAR SURFACE PROTECTION

- **Lid deformities with exposure keratitis**



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- **Lid deformities with exposure keratitis**



# OCULAR PATHOLOGY - TCL USED FOR OCULAR SURFACE PROTECTION

- **Entropion**
- **Ectropion**
- **Trichiasis**
  - for optical and therapeutical purpose



- Extended carcinoma on the whole face and the upper and lower lid – after many plastic surgical interventions becomes lagophthalmus with exposure keratopathy





# OCULAR INJURIES



- **Chemical burns**

TCL may inhibit the passage of certain proteolytic enzymes present in the tear film to the stroma, thus preventing the progressive ulcerative process

- For peripheral defect low water content soft lenses may stimulate vascular ingrowth and arrest the ulcerative process
- When the lids are also involved, a scleral lens is of choice
- In alkali burns - scleral lenses and very large soft lenses help prevent simblefaron in later stages





- RE: old corneo-conjunctival chemical burn.



- RE: amniotic membrane transplant - surgery.



- RE 14 days postop.





- LE: chemical burn



- LE: amniotic membrane transplant



- 1 month postop.



- After the correction of trichiasis



# OCULAR INJURIES

- **Corneal abrasions**
  - – instead of ocular patch
- **Corneal lacerations without perforation**
  - - no infected, limbal wounds ( less vascularisation )
- **Corneal perforations**
  - – TCL with or without cyano-acrylate glue, before or instead of sutures
  - central injuries (less astigmatism)



# OCULAR INJURIES



- RE: Corneal wound which needed minimal suture + TCL



# OCULAR INJURIES



- RE: Inferior corneal wound with iris issue
- Minimal suture + TCL



# OCULAR INJURIES



- LE: Inferior wound without membrane issue, TCL



# OCULAR INJURIES



- In most cases the therapeutic contact lens avoids the suture or minimizes it





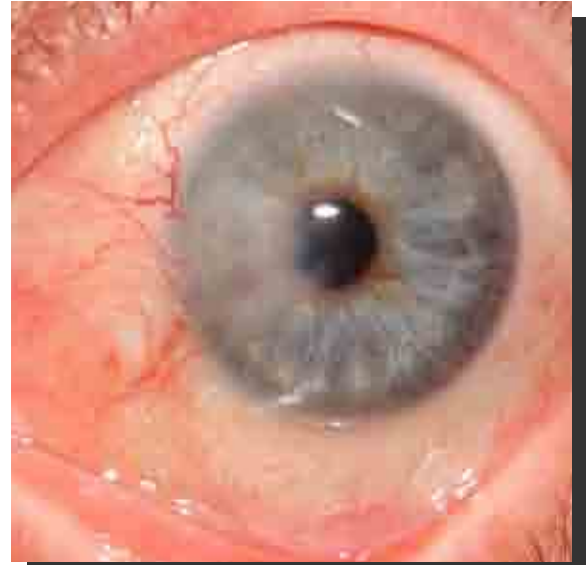
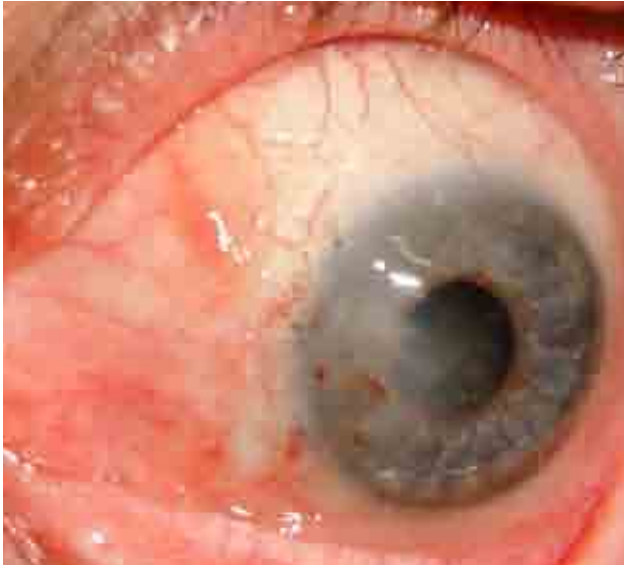
# POST SURGERY

## Pterygium

- Reduce pain
- Promote corneal epithelisation
- Reduce number and severity of recurrences



# POST SURGERY PTERYGIUM



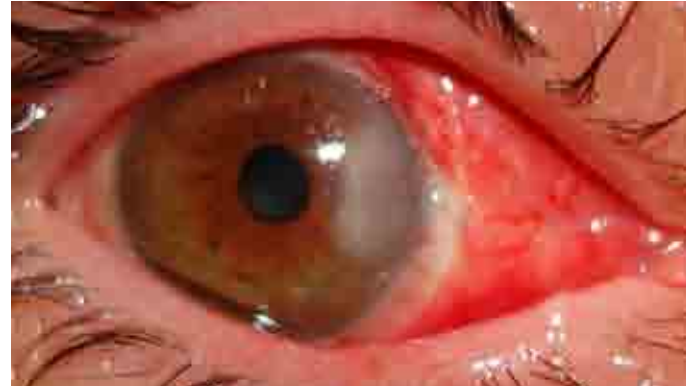
# POST SURGERY PTERYGIUM



TCL & AMT



# POST SURGERY PTERYGIUM



TCL



# POST SURGERY PTERYGIUM



TCL & AMT



# POST SURGERY

## Cataract

- Leaking incision – positive Seidel



# POST SURGERY

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# POST SURGERY

## Cataract

- Leaking incision – positive Seidel





# POST SURGERY

## **Glaucoma**

- leaking drainage bleb
- large diameter 14-16 mm



# POST SURGERY OTHER INDICATIONS

- **Refractive surgery**
  - PRK, LASEK, LASIK
  - Promotes healthy wound-healing by preventing corneal dessication, particularly when surface ablation leaves the stroma bare – within 4 days.
  - Prevents extremely thin flaps to be dislodged
- **Keratoplasty**
  - delayed epithelial healing,
  - epithelial filament formation,
  - steps in host – graft junction,
  - loose sutures
- **Collagen cross linking**
- **Ocular surface reconstruction with amniotic membrane**
  - They allow the cell growth and adhesion to take place without interference from the blinking eyelids and also protect the eyelids from irritations caused by sutures.
- After vitrectomy



# COMPLICATIONS



- ✓ *We should never forget that we fit TCL on an illness eye and we have to be much more cautious*
- Corneal oedema
- Corneal vascularisation
- Corneal infiltrates
- Deposits
- Giant papillary conjunctivitis
- Infection ( extended wear, diabetes, corticosteroids)
  - Corneal ulcer with / out hypopion, microbial conjunctivitis etc.
- Hypopion

Antibiotics and other ointments – should be preservative free

# COMPLICATIONS – RELATED TO:

## Patient

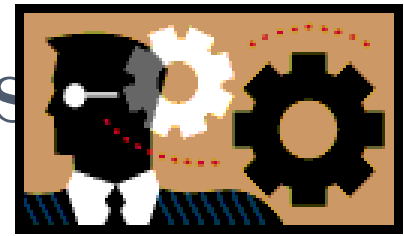
- Severity of disease
- Dry eye
- Topical steroids
- Compliance
- Hygiene
- General health  
(Diabetes, etc.)
- Motivation

## Lens

- Hypoxia
- Deposition
- Mechanical trauma
- Poor fit
- Extended wear



# INSTEAD OF CONCLUSIONS *KEEP IN MIND*



- Soft lenses are preferred because of the large diameter, supple nature, low movement amplitude and enhanced comfort.



- Silicone hydrogel lenses, available since 1999 and approved for therapeutic use, became the first choice because of very high oxygen transmissibility, lower on-eye dehydration and good comfort and coverage of the eye surface.



# INSTEAD OF CONCLUSIONS *TO TAKE HOME*



- TCL are offering great benefits in ocular surface pathology
- Reducing pain, avoiding ocular patch, restoring binocularity, TCL is improving the **quality of life** for our patient with ocular disorders



# *THE 11<sup>TH</sup> CONGRESS OF THE ROMANIAN CONTACT LENS SOCIETY*

**SIBIU, ROMANIA – HILTON HOTEL**

**4<sup>th</sup> November – 6<sup>th</sup> November 2011**

**INFO: <http://www.contactologia.ro>**



*Thank you!*

