PACK-CXL

as first-line treatment in infectious keratitis

DGII 2017

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Financial disclosures

- Named co-inventor on PCT applications CH2012/0000090 and PCT2014/CH000075

- Chief Scientific Officer EMAGine SA

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1. Background

AMR (Antimicrobial resistance), a global problem

G7 GERMANY

2015 | Schloss Elmau

Infectious keratitis - “Silent epidemic” (WHO)

Developed countries

Antibiotic resistance

Mixed infections

High costs

Developing countries

6-8 Million new cases / year

205’000 ophthalmologists

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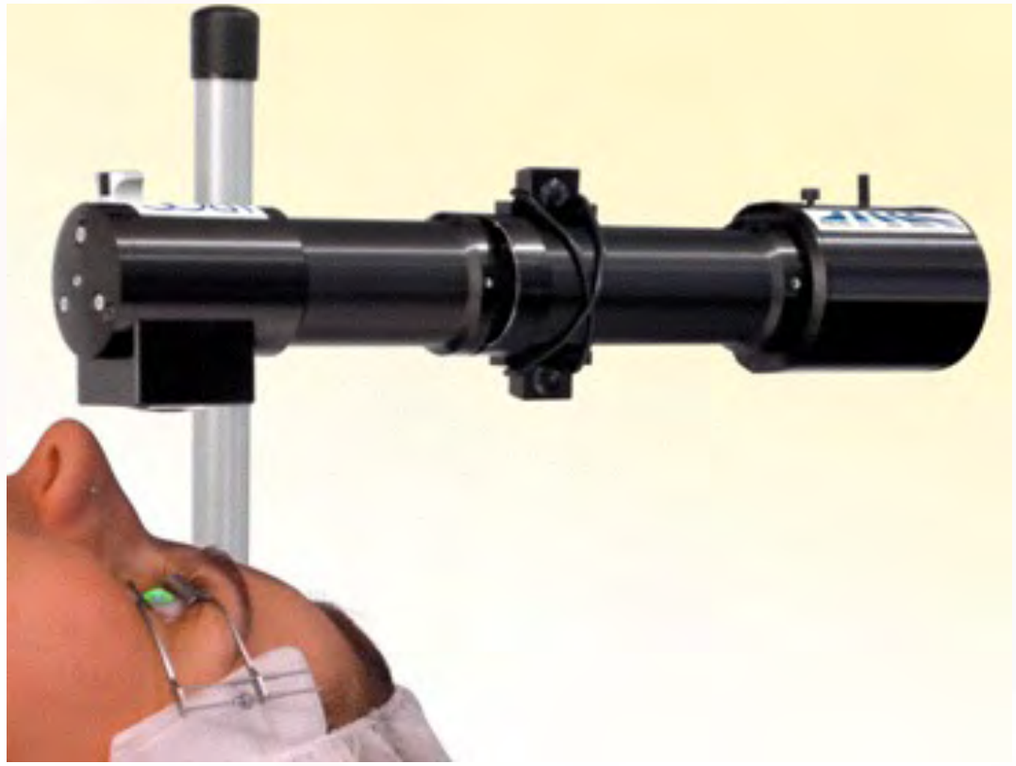
1. Background

Zurich, Switzerland: 2004



IROC

(Seiler, Mrochen, Hafezi, Iseli)

ETH

Swiss Federal Institute of Technology

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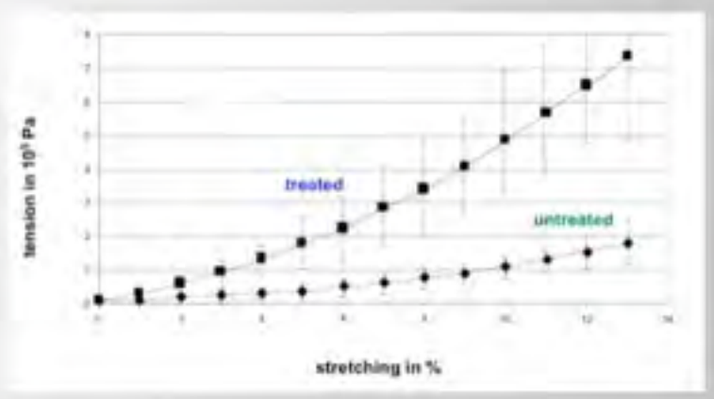
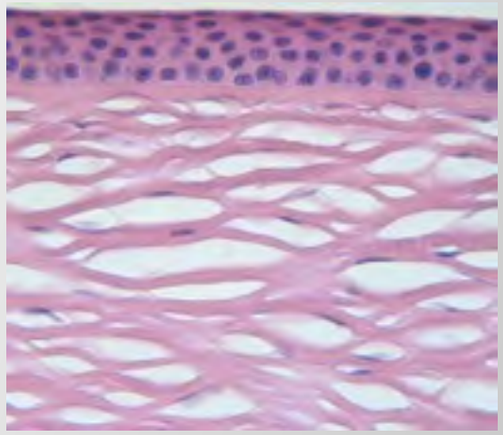
1. Background

Cross-Linking effects

1 Biomechanical stiffening

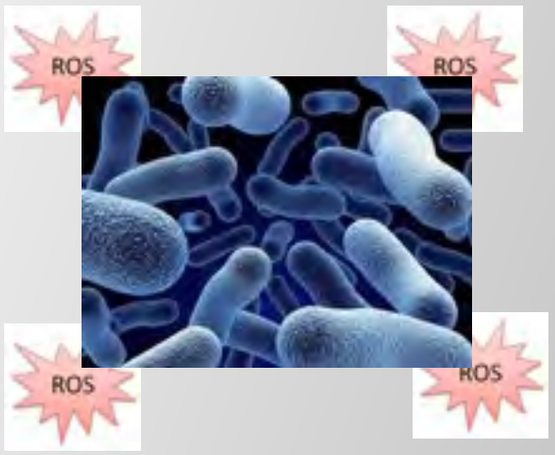


2 Steric hindrance



3 DNA/RNA intercalation

4 Oxidative stress



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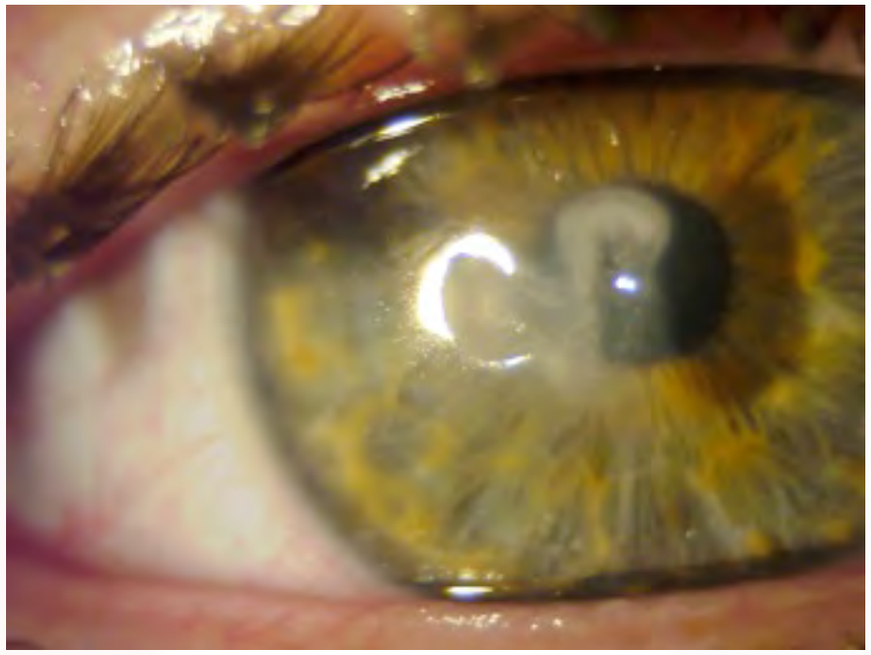
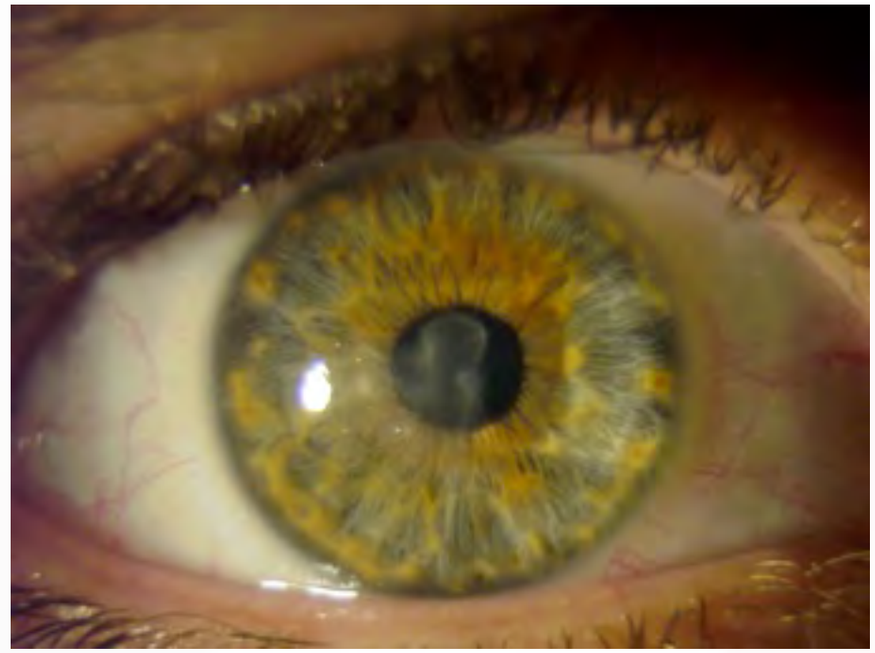
1. Background

2. First Results

2008. Switzerland. Proof of principle.



Post-LASIK keratitis



Ten days after PACK-CXL

Iseli et al, 2008, Cornea

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1. Background

2. First Results

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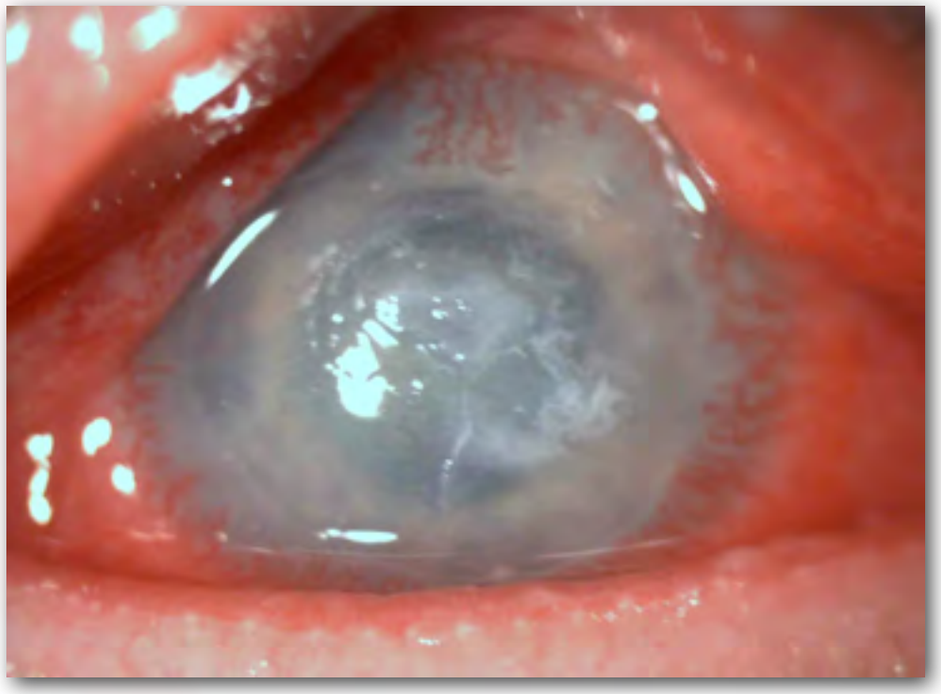
2011 Phase 2 Clinical Trial

No antibiotics



Before PACK-CXL

Two weeks after PACK-CXL

Makdoumi et al., Curr Eye Res, 2011

Future treatment needs

- Simplify
- Accelerate
- Access to all

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1. Background

2. Results

3. Optimize

Simplify

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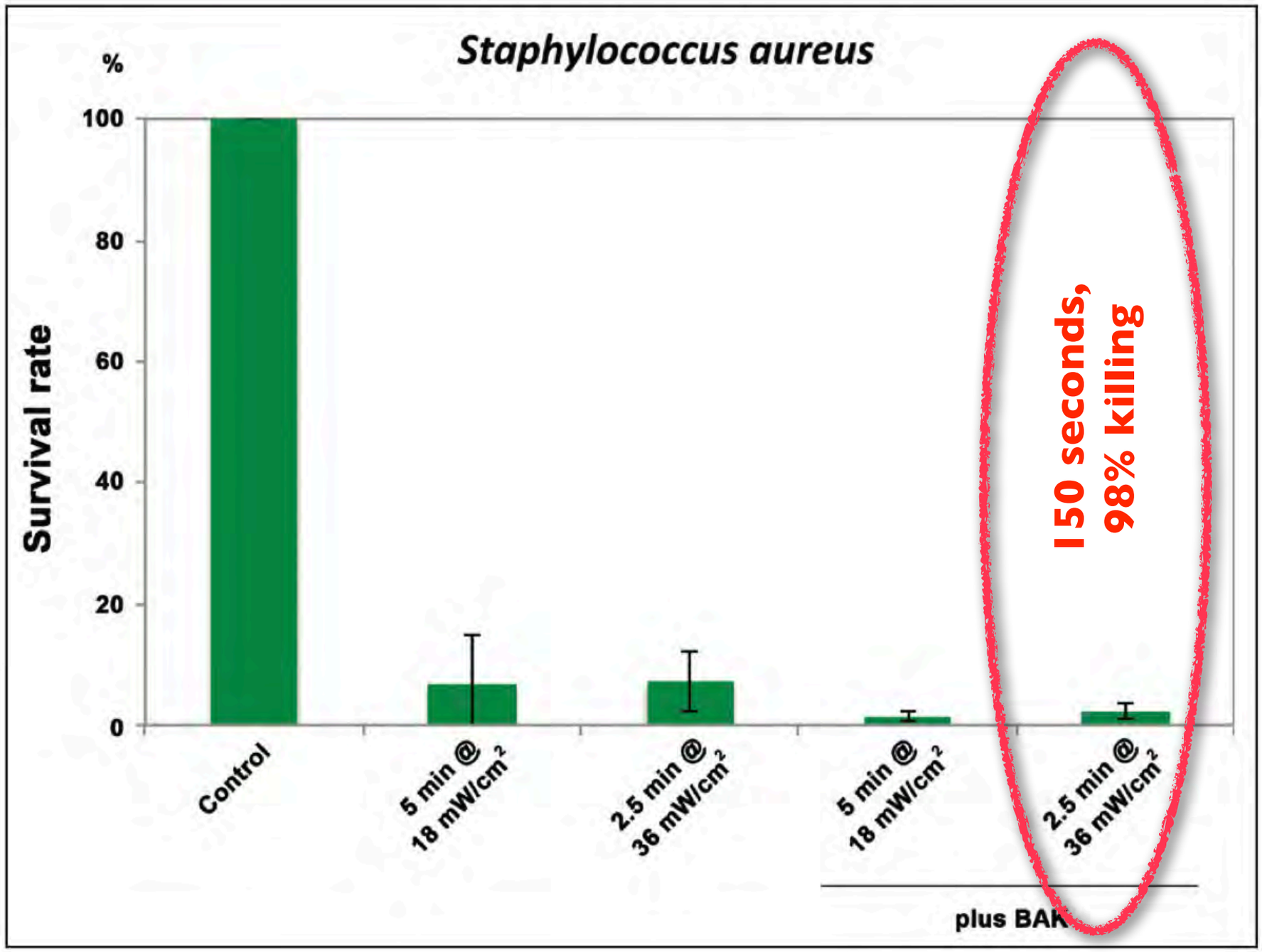
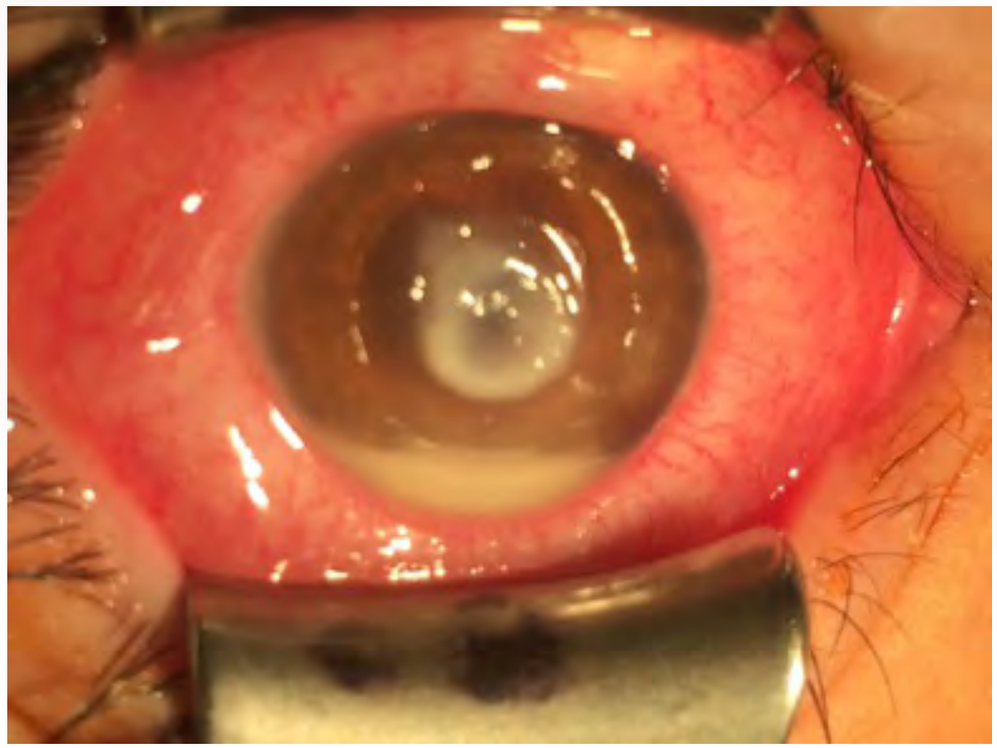
Accelerate

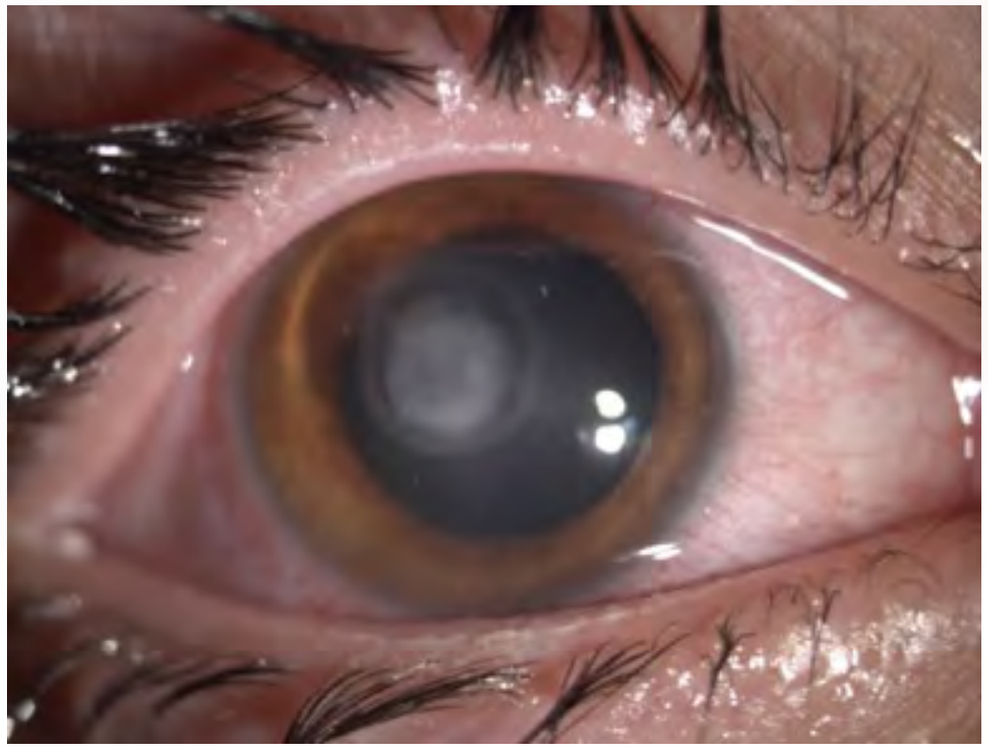


Richoz et al, JRS, 2014

Phase 2 trial: accelerated PACK-CXL

- 180 seconds @ 30 mW/cm^2
- Adjuvant to antibiotics





Knyazer et al., in preparation

Swiss PACK-CXL multicenter trial

- Phase 3 prospective, randomized, multicenter trial
- Non-inferiority study
- Infiltrates and small ulcers < 2 mm, < 300 µm depth

11 sites
10 countries

C-Eye© device

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CEye© device

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Introduction at ESCRS 2016 Copenhagen

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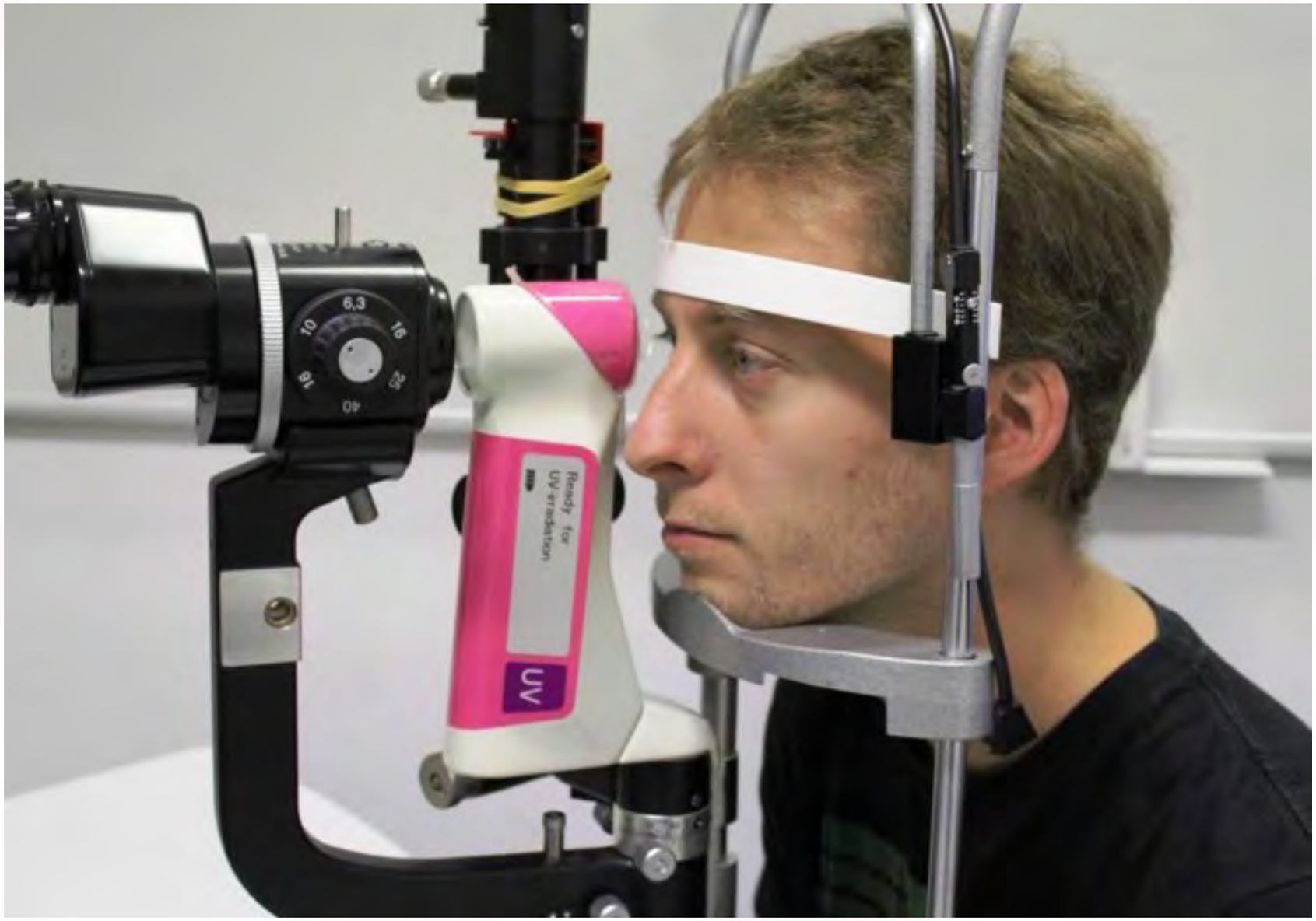

Conclusions PACK-CXL

- Accelerated to 180 seconds
- Highly efficient in bacteria and fungi
- CXL at the slit lamp: access to all

Zurich

Nov 30 - Dec 2, 2017

Mövenpick Hotel

www.cxlexpertsmeeting.com