Ultraviolet A/Riboflavin Collagen Cross-Linking for Treatment of Moderate Bacterial Corneal Ulcer

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Introduction

• Bacterial ulcerative keratitis activates proteolytic enzymes.

• Cross linking of the cornea increases its resistance to enzymatic degradation
Material and Method

• Prospective randomized interventional study
• 32 patients with moderate bacterial corneal ulcer.
• 2-6 millimeters in size
Material and Method

• 8 mm-diameter zone of abrasio
• 0.1% hypo-osmolaric riboflavin every 3 minutes for 30 minutes
Material and Method

• Postop follow-ups at one day, seven days, and fourteen days
Results

• **Time to healing:**
  
  - CXL group: 17.2 ±4.1 days
  - Only one patient required amniotic membrane transplantation (AMT) after 25 days.
  
  Control group: 24.7±5.5 days,
  - One patient required AMT after 28 days
  - One patient required conjunctival flap after 30 days.

  **The duration of treatment was lower for the patients in CXL group (P<0.001).**
Results

• Grade of ulcers in CXL and control groups
Results

• Mean area of epithelial defects (mm$^2$) in CXL and control groups
Results

- Mean area of infiltrates (mm$^2$) in CXL and control groups
Discussion and conclusion

• By shortening the course of treatment, CXL can reduce the toxicity effects of topical antibiotics on the cornea, strengthen the cornea and prevent healthcare associated infections.