

Photoactivated Chromophore for Keratitis-Cross Linking Window Absorption Alone versus Combined Pack-CXL Window Absorption and Standard Anti-microbial Therapy for Treatment of Infectious Keratitis: A Prospective Study

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Abstract : Objective: The aim of this work is to compare the outcome of photoactivated chromophore for keratitis-cross linking (PACK-CXL) window absorption (WA) alone with combined PACK-CXL WA and standard anti-microbial therapy (SAT) for the treatment of infectious keratitis. Patients and Methods: This is a randomized prospective comparative clinical trial. Thirty eyes with clinically suspected infectious keratitis were randomly assigned into two equal groups of 15 eyes each: Group (A) was treated by PACK-CXL WA alone and group (B) was treated by PACK-CXL WA combined with SAT. Identification of organisms was made by lab study before treatment. Corneal healing was evaluated by corneal examination and anterior segment OCT (AS-OCT). Written informed consent was obtained from all participants and the study was approved by the research ethics committee of the Faculty of Medicine, Zagazig University. The work has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans. Results: Complete healing and resolution (Successful treatment) were observed in 10 eyes (66.7%) of a group (A) and 14 eyes (93.3%) of group (B) and failure was observed in 5 eyes (33.3%) of a group (A) and one eye (6.67%) of group (B). They were statistically significant ($P = 0.042$ and 0.003) in a comparison between both groups regarding success and failure of treatment, respectively. Complete corneal healing was reported in the third month postoperatively in 10 eyes (66.7%) of group (A) and 14 eyes (93.3%) of group (B). Complications were absent in 12 patients (80%) in group (A) and 14 patients (93.3%) of group (B); however, perforation and impending perforation were found in 3 patients of group (A) and only one patient of group (B). Conclusion: PACK-CXL is a promising, non-invasive treatment option for infectious keratitis, especially when performed with the window absorption (WA) technique, either alone or combined with SAT. It has a synergistic effect with a standard antimicrobial treatment that gives good outcome results in the treatment of infectious keratitis. Also, it avoids the antibiotics resistance that has become rapidly spreading worldwide.

Keywords : corneal cross linking, infectious keratitis, PACK-CXL, window absorption

Conference Title : ICCEO 2021 : International Conference on Clinical and Experimental Ophthalmology

Conference Location : Moscow, Russia

Conference Dates : August 30-31, 2021