

Role of Phototherapeutic Keratectomy in treatment of various corneal lesions

Essay

Submitted for partial fulfillment of Master degree in
Ophthalmology

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2014

دور اقتطاع سطح القرنية بالمعالجة الضوئية في علاج أمراض القرنية المختلفة

رسالة مقدمة من

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٢٠١٤

Acknowledgment

First of all, I would like to express my deepest gratitude to "Allah" for all his favours and blessings.

I would like to thank Prof. Dr. Hazem Nouh, Professor of Ophthalmology, Ain Shams University, for his great help and support. It is a great honor to work under his supervision.

I would like also to express my sincere appreciation and thanks to Dr. Ahmed Taha, Lecturer of Ophthalmology, Ain Shams University, who helped me a lot to finish this work.

Words can hardly express my sincere and great appreciation to my family who encouraged me and prayed for me. Great acknowledgement and thanks to my teachers and colleagues for their cooperation.

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List of abbreviations

AD: Autosomal dominant.

AMT: Amniotic membrane transplantation.

AS-OCT: Anterior segment Optical coherence tomography.

ATPase: Adenosine triphosphatase.

BCVA: Best corrected visual acuity.

BK: Bullous keratopathy.

BL: Bowman's layer.

BSK: Band-shaped keratopathy.

CAG: Conjunctival autografts.

CDK: Climatic droplet keratopathy.

CL: Contact lens.

Cm: Centimeter.

CXL: Cross-linking.

DALK: Deep anterior lamellar keratoplasty.

DLK: Diffuse lamellar keratitis.

DSAEK: Descemet stripping automated endothelial keratoplasty.

ECM: Extracellular matrix.

EDTA: Ethylenediamine tetraacetic acid.

eV: electron Volt.

FDA: Food and drug administration.

FED: Fuchs endothelial dystrophy.

GCD: Granular corneal dystrophy

H: Hour.

ICRS: Intrastromal corneal ring segments.

IOL: Intraocular lens.

IOP: Intraocular pressure.

KCN: Keratoconus nodules.

LASIK: Laser in-situ keratomileusis.

LCD: Lattice corneal dystrophy.

LKP: Lamellar keratoplasty.

MCD: Macular corneal dystrophy.

MHz: Mega Hertz.

Min: Minutes.

Mm: Millimetre.

µm: Micrometer.

MMC: Mitomycin-C.

Nm: Nanometer.

Ns: Nanoseconds.

NSAIDs: Nonsteroidal anti-inflammatory drugs.

OCT: Optical coherence tomography.

PALM: Photoablated lenticular modulator.

PKP: Penetrating Keratoplasty.

PMMA: Polymethyl methacrylate.

PRK: Photorefractive keratectomy.

PTK: Phototherapeutic keratectomy.

RBCD: Reis-Bücklers corneal dystrophy.

RCE: Recurrent corneal erosions.
RGP: Rigid gas permeable.
S: Seconds.
SBCL: Soft bandage contact lens.
SCCD: Schnyder crystalline corneal dystrophy.
SCI: Steep central island.
SK: Superficial keratectomy.
SND: Salzmann's nodular degeneration.
TEM: Traditional eye medicines.
UBM: Ultrasound biomicroscope.
UCVA: Uncorrected visual acuity.
UV: Ultraviolet.
VA: Visual acuity.
WHO: World health organization.

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Introduction

The cornea is the transparent connective tissue window at the front of the eye. The smooth, wet surface of the cornea is the major refractive surface of the visual system, which, along with corneal transparency, enables light to proceed through the lens and onto the retina for photoreceptor activation **(Gipson, 2007 and Knupp et al, 2009)**.

Corneal diseases such as scars, degenerations(e.g. band-shaped keratopathy “BSK”), dystrophies, bullous keratopathy (BK), microbial keratitis and recurrent corneal erosions(RCE) are important causes of visual blindness. Anterior stromal diseases, being superficial, can be treated using various minimally invasive surgical procedures like lamellar keratoplasty(LKP) or by excimer lasers, that is, phototherapeutic keratectomy(PTK) (**Rathi et al, 2012**).

PTK is an important, safe and effective excimer laser-based surgical tool for treatment of numerous corneal disorders that successfully attains smooth regular ocular surface **(Arfaj et al, 2011)**.

The key to a successful outcome depends on proper case selection. For the right indication and successful