

# بسم الله الرحمن الرحيم





# شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم





# جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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لم ترد بالأصل





# **Comparison between Myoring<sup>®</sup> and 355°KERATACx<sup>®</sup> in Management of Keratoconus**

*Thesis*

*Submitted for Partial Fulfillment of M.D.  
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سببنا أنك لا تعلم لنا  
إلا ما علمتنا إنك أنت  
العليم العظيم

صدق الله العظيم

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## *List of Abbreviations*

Abb.	Full term
BCVA.....	Best corrected visual acuity
CH.....	Corneal Hysteresis
CIM.....	Corneal irregularity measurement
CISIS .....	Corneal intra-stromal implantation system
CRF.....	Corneal resistance factor
DNA .....	Deoxyribonucleic acid
ICRS .....	Intracorneal ring segments
IOP.....	Intraocular Pressure
IOPCC.....	Corneal-Compensated Intraocular Pressure
I-S .....	Inferior-superior
K.....	keratometric reading
Kc.....	Keratoconus
KCI.....	Keratoconus classification index
KPI.....	Keratoconus prediction index
Max K .....	Maximum keratometric reading
Mean K .....	Mean keratometric reading
OD.....	Oculus dextrus
ORA .....	Ocular response analyzer
OS .....	Oculus sinister
PMMA.....	Polymethyl- methacrylate
SAI .....	Surface asymmetry index
SE.....	Spherical equivalent
SRI .....	Surface regularity index
TGCK.....	Topography-guided conductive keratoplasty
UCVA.....	Uncorrected visual acuity



## INTRODUCTION

**K**eratoconus is a progressive, non-inflammatory, bilateral (but usually asymmetrical), degenerative disease of the cornea, characterized by paraxial stromal thinning that leads to corneal surface distortion. Visual loss occurs primarily from irregular astigmatism and myopia and secondarily from corneal scarring (*Karseras and Ruben, 1976; Kennedy et al., 1986*).

The pathological process as a number of studies have indicated is that keratoconic corneas show signs of increased activity by proteases, a class of enzymes that break some of the collagen cross-linkages in the stroma, with a simultaneous reduced expression of protease inhibitors. This results in a reduction in the corneal thickness and biomechanical strength (*Andreessen et al., 1980; Spoerl et al., 2004*).

Keratoconus remains one of the main indications for performing perforating transplantation of the cornea, nevertheless, in recent years there has been ever increasing use of methods which can have a favorable influence on the course of the disease, and thus decrease (or even eliminate) the necessity of transplantation, of these methods is implantation of intrastromal ring segments, the purpose of which is to flatten the central part of the cornea and regularize it, which in its result may lead to an improvement of the patient's visual acuity and by this helps to relieve major parts of patients' complaints (*Studený et al., 2015*).