Transplantation Of Ex Vivo Expanded Epithelial Stem Cells In Limbal Stem Cell Deficiency (Laboratory / Clinical Prospective Interventional Non-Controlled Non- Randomized Study)

A Thesis

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M.D Degree in Ophthalmology

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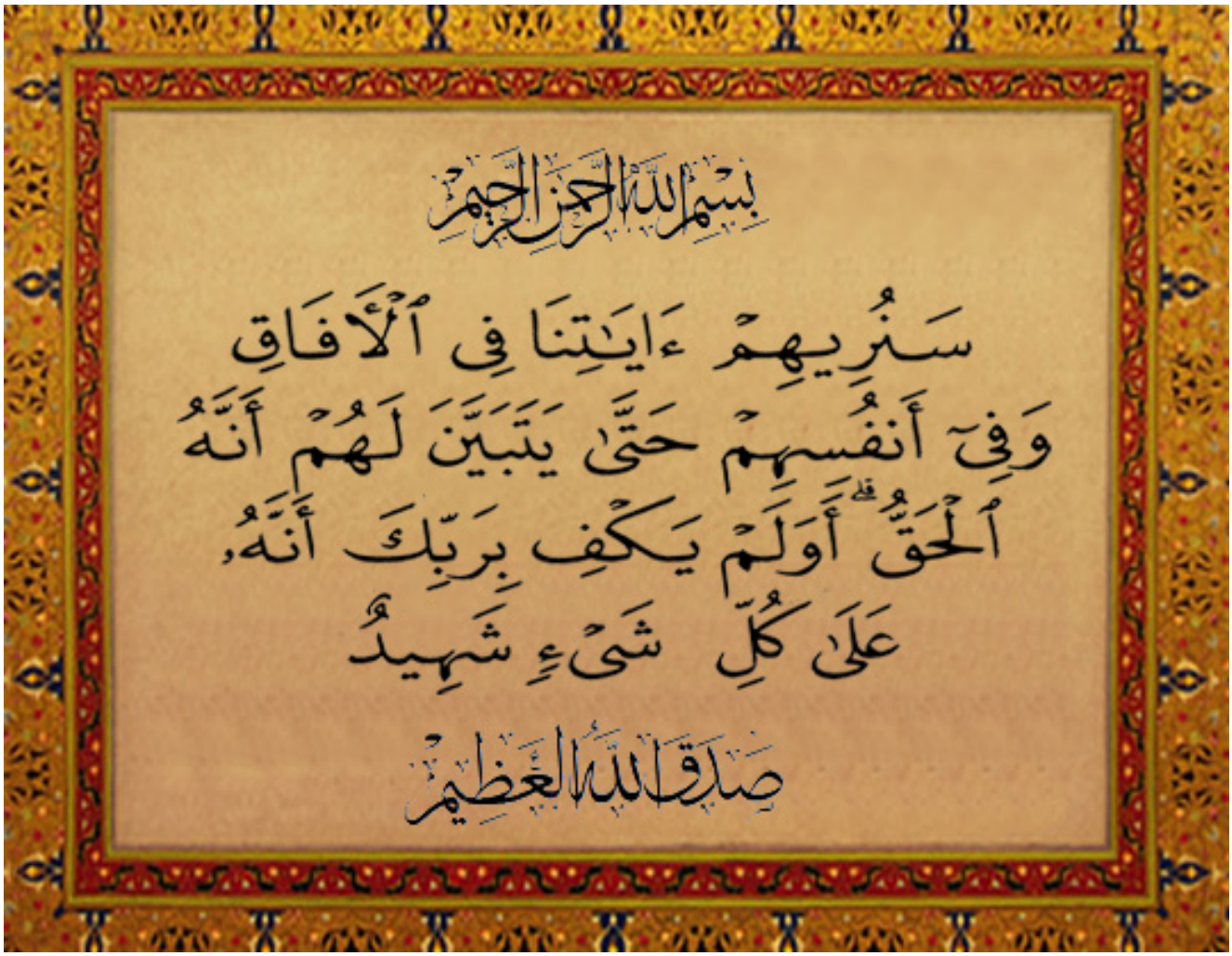
بسم الله الرحمن الرحيم
سَنُرِيهِمْ ءَايَٰتِنَا فِى ٱلْءَافَاقِ
وَفِىٓ أَنفُسِهِمْ حَتَّىٰ يَتَبَيَّنَ لَهُمْ أَنَّهُ
ٱلْحَقُّ ۗ أَوَلَمْ يَكْفِ بِرَبِّكَ أَنَّهُۥ
عَلَىٰ كُلِّ شَىْءٍ شَهِيدٌ
صدق الله العظيم

(فصلت ٥٣)

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ABSTRACT

Limbal stem-cell deficiency can be congenital or acquired; it can also be partial or total. Treatment options include: conjunctival-limbal autografts, keratolimbal lamellar allograft, and living-related conjunctival-limbal allografts. A novel method of transplanting limbal stem cells is via ex-vivo expansion of limbal stem cells; with the advantages of: a smaller limbal biopsy, reduced risk of precipitating stem cell failure in the donor eye, and allowing the option of taking a further biopsy if required.

KEY WORDS

Cornea – Stem cells – Limbal – ex-vivo expansion

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LIST OF ABREVIATIONS

BSS .....balanced salt solution

CLAU .....conjunctival-limbal autografts

CUEB .....Cairo University Eye Bank

EDTA .....ethylenediaminetetraacetic acid

FGF ..... fibroblast growth factor

HMGP ..... hand motion good projection

IGF-1 ..... insulin-like growth factor-1

KLAL ..... keratolimbal lamellar allograft

LESCs ..... limbal epithelial stem cells

lr-CLAL ..... living-related conjunctival-limbal allografts

LSCD ..... limbal stem cell deficiency

M.K. medium ..... McCarey-Kaufman medium

NGF .....nerve growth factor

NICD .....notch intracellular domain

OCP ..... ocular cicatricial pemphigoid

PBS ..... phosphate buffered saline

PLGP ..... perception of light good projection

PMC .....post mitotic cells

rpm .....revolution per minute

SSCE .....sequential sector conjunctival epitheliectomy

TAC .....transient amplifying cells

TDC .....terminally differentiated cells

VA .....visual acuity

Introduction
&
Aim of Work