2009 Research Days Abstract Form – Department of Ophthalmology – UNIFESP/EPM

2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):

Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

X **Paper**
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4. The signature of the First (Presenting) Author (REQUIRED) acting as the authorized agent for all authors, hereby certifies that any research reported was conducted in compliance with the Declaration of Helsinki and the 'UNIFESP Ethical Committee"

Bruno M Fontes

Scientific Section Descriptions (two-letter code):

(BE) OCULAR BIOENGINEERING
(CO) CORNEA AND EXTERNAL DISEASE
(CA) CATARACT
(EF) ELECTROPHYSIOLOGY
(EP) EPIDEMIOLOGY
(EX) EXPERIMENTAL SURGERY
(GL) GLAUCOMA
(LA) LABORATORY
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(PH) PHARMACOLOGY
(RE) RETINA AND VITREOUS
(RS) REFRACTIVE SURGERY
(RX) REFRACTION-CONTACT LENSES
(ST) STRABISMUS
(TR) TRAUMA
(TU) TUMORS AND PATHOLOGY
(UV) UVEITIS
(US) OCULAR ULTRASOUND

Deadline: Oct 12, 2009

FORMAT:
Abstract should contain:
Title
Author, Co-authors (maximum 6), Purpose, Methods, Results, Conclusion.

Poster guidelines:
ARVO Abstract Book (1.10 x 1.70m)

2. FIRST (PRESENTING) AUTHOR (REQUIRED)
Must be author listed first in body of abstract

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Last Name	**First**	**Middle**

REFRACTIVE SURGERY — **0123/06**
Service (sector) — Nº CEP

CORNEAL BIOMECHANICAL METRICS AND ANTERIOR SEGMENT PARAMETERS IN MILD KERATOCONUS

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PURPOSE: To evaluate and compare corneal hysteresis (CH), corneal resistance factor (CRF), spherical equivalent (SE), average central keratometry (K-Ave), corneal astigmatism (CA), corneal volume (CV), anterior chamber depth (AC depth) and central corneal thickness (CCT) in patients with mild keratoconus and controls. A secondary goal was to estimate CH's and CRF's sensitivity and specificity in discriminating mild keratoconus from healthy corneas.
METHODS: Case-control study. Patients were submitted to complete clinical eye examination, corneal topography (Humphrey ATLAS), tomography (Pentacam) and biomechanical (Ocular Response Analyzer) evaluation. Receiver operating characteristic (ROC) curve was used to identify the cutoff point to maximize sensitivity and specificity in discriminating mild keratoconus from normal corneas.
RESULTS: Sixty-three eyes (forty patients) with mild keratoconus (Group 1), and eighty eyes from forty sex and age-matched controls (Group 2).
SE was-3.55±2.87 Diopters (D) in Group 1 and –1.46±3.09 D in Group 2; p=0. K-Ave was 45.09±2.24 D in Group 1 and 43.24±1.54 D in Group 2; p=0. CA was 3.15±1.87 D in Group 1 and 1.07±0.83 D in Group 2; p=0. CV was 57.3±2.12 mm³ in Group 1 and 60.86±3.39 mm³ in Group 2; p=0. AC depth was 3.19±0.35 mm in Group 1 and 3.05±0.43 mm in Group 2; p=0.0416. CCT was 503±34.15µm in Group 1 and 544.71±35.89µm in Group2; p=0. CH was 8.50±1.36mmHg in Group 1, and 10.17±1.79mmHg in Group 2; p=0. CRF was 7.85±1.49mmHg in Group 1, and 10.13±2.0mmHg in Group 2; p=0. ROC curve analyses showed poor overall predictive accuracy of CH (cutoff point 9.64mmHg, sensitivity of 87%, specificity of 65% and test accuracy of 74.83%) and CRF (cutoff point 9.60mmHg, sensitivity of 90.5%, specificity of 66% and test accuracy of 76.97%) in detecting mild keratoconus.
CONCLUSION: CH, CRF, CV and CCT were statistically lower, while SE, K-Ave, CA and AC depth values were statistically higher in mild keratoconus. CH and CRF presented low accuracy in discriminating mild keratoconus from normal corneas.

Keywords: keratoconus, corneal biomechanics, corneal hysteresis