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

2. SCIENTIFIC SECTION PREFERENCE (REQUIRED): GL

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:
- ☐ Paper
- ☐ Poster
- ☐ FAST Paper

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"

MauroLeite_____

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
(LS) LACRIMAL SYSTEM
(LV) LOW VISION
(NO) NEURO-OPHTHALMOLOGY
(OR) ORBIT
(PL) OCULAR PLASTIC SURGERY
(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)

101.    FIRST (PRESENTING) AUTHOR (REQUIRED):
Must be the author listed first in abstract body.

( ) R1       ( ) R2       ( ) R3          ( ) PIBIC
( ) PG0     (x) PG1      ( ) Fellow       ( ) Technician

Last Name: Leite
First Name: Mauro
Middle: Toledo

Service (Sector): Glaucoma

CEP Number: 1438/95

5. ABSTRACT (REQUIRED):

Effect of Disease Severity on the Performance of Cirrus Spectral-Domain OCT for Glaucoma Diagnosis

Author and Co-authors (maximum 6) Mauro T. Leite, Linda M. Zangwill, Pamela A Sample , , Harsha L. Rao, Luciana M Alencar, Robert N. Weinreb, Luiz A Melo Jr., Ivan M. Tavares, Felipe A. Medeiros.

**Purpose:** To evaluate the effect of disease severity on the diagnostic accuracy of the Cirrus Optical Coherence Tomograph (Cirrus HD-OCT; Carl Zeiss Meditec, Inc., Dublin, CA) for glaucoma detection.

**Methods:** One hundred thirty five glaucomatous eyes from 99 patients and 79 normal eyes from 47 subjects were recruited from the longitudinal Diagnostic Innovations in Glaucoma Study (DIGS). Severity of the disease was graded based on the visual field index (VFI) from standard automated perimetry. Imaging of the retinal nerve fiber layer (RNFL) was obtained using the optic disc cube protocol available on the Cirrus HD-OCT. Pooled receiver operating characteristic (ROC) curves were initially obtained for each parameter of the Cirrus HD-OCT. To evaluate the effect of disease severity on the diagnostic performance, an ROC regression model was fitted using VFI as a covariate and areas under the ROC curves (AUC) were obtained for different levels of disease severity.

**Results:** The largest pooled AUCs were for average thickness (0.892), inferior quadrant thickness (0.881) and superior quadrant thickness (0.874). Disease severity had a significant influence on the detection of glaucoma. For the average RNFL thickness parameter, AUCs were 0.962, 0.932, 0.886 and 0.822 for VFI values of 70%, 80%, 90% and 100%, respectively.

**Conclusion:** Disease severity had a significant effect on the diagnostic performance of the Cirrus HD-OCT. This should be considered when interpreting results from this device and when considering the potential applications of this instrument for diagnosing glaucoma under different clinical settings.

Keywords:
Glaucoma, imaging, spectral-domain OCT.

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