3 de Dezembro **08h30 | 10h00 – Sala 4**

Superficie Ocular Externa | Ocular Surface

Moderadores | Chairs: Irene Barbosa (CHUP), Paul Campos (HGO), Vitor Maduro (CHULC)

CO 133
CORNEAL EPITHELIAL THICKNESS EVALUATION IN DRY EYE PATIENTS

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Objectives: To study the correlation between epithelial corneal thickness and severity of symptoms in patients with dry eye disease (DED).

Methods: We conducted a cross-sectional study with subjects from the outpatient clinic of the Ophthalmology Department of Centro Hospitalar Universitário do Porto, a tertiary hospital. Adult patients with a clinical diagnosis of dry eye disease were eligible for participation. Each patient underwent Swept-Source Optical Coherence Tomography (OCT) Corneal Epithelial Thickness Mapping (by Anterion®, Heidelberg®) and automated ocular surface analysis (by IDRA® Ocular Surface Analyzer SBM Sistemi, Italy). Schirmer's test, tear film osmolarity (by TearLab® Osmolarity System) and Dry-Eye Related Questionnaire (OSDI-12) were evaluated separately. Patients were classified accordingly to OSDI-12 score in group 1 (normal to mild disease) and group 2 (moderate to severe disease).

Results: This study enrolled 114 eyes (of 59 subjects): 41 in group 1 and 73 in group 2. Fifteen (25.0%) patients were male, and the median (range) age was 66 (79) years old, with no significant difference between groups. Median (range) OSDI was 7 (22) in group 1 vs. 54 (67) in group 2 ($p<0.001$). Eyes from group 2 showed higher epithelial thickness (mean 48.6 vs. 46.2 µm, $p=0.003$) and lower stromal thickness (mean 516.6 vs. 542.5 µm, $p=0.005$) in comparison with group 1. Maximum epithelial thickness was higher in group 2 – mean (range) 61.9 (8.7) vs. 58.8 (8.0) µm, $p=0.028$ in group 1 - and it was located inferiorly in both groups. Overall, the OSDI score was positively correlated with epithelial thickness ($r=0.210$, $p=0.025$) and negatively correlated with stromal thickness ($r=-0.374$, $p<0.001$). Schirmer's test was negatively correlated with the difference between the inferior and superior epithelial thickness ($r=-0.200$, $p=0.031$).

Conclusion: Our study suggests a positive correlation between the severity of dry eye symptoms and corneal epithelial thickness. Possible mechanisms may include mechanical eye rubbing, epithelial hyperplasia and modulation of corneal bicomechanic properties. More evidence is required to support our results.