



RELATION BETWEEN MEIBOGRAPHY OF THE TWO EYES, NIBUT AND OSDI IN YOUNG SUBJECTS



Alessandro Fossetti^{1,2}, Simone Aru¹, Carlo Falleni^{1,4}, Alessandro Farini^{1,3}, Alessandro Landi¹, Andrea Ramacciotti¹

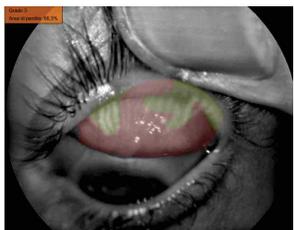
Istituto Regionale Studi Ottici e Optometrici (IRSOO)¹, Vinci, Italy, Università degli Studi di Firenze², Italy, INO - CNR, Firenze³, Italy, Università degli Studi di Torino⁴, Italy

PURPOSE

This is a common opinion that Meibomian Gland Dysfunction (MGD) is the leading cause of dry eye (DE). The assessment of the ocular surface and of the MG conditions is the basis for the identification of the DE. The Meibography has been called to provide an in-vivo means to assess the structure of the MGD and to indicate DE (Pult H et al, 2012). NIBUT and OSDI has been indicated as means helping to diagnose DE. The aim of this study was to investigate the correlations between Meibography, NIBUT and OSDI for the detection of DE. We used a larger and younger sample than the sample examined in the paper from Pult et al. (2012), that we use as a reference work.

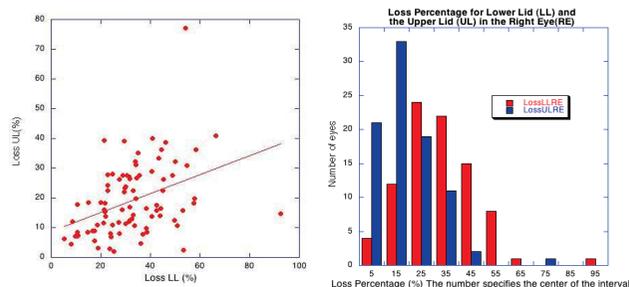
METHODS

87 students were recruited at the Optics and Optometry School in Vinci, Florence (median age=22, interquartiles 21-24). 38 subjects were women and 21 were LAC wearer. After the compilation of the OSDI questionnaire, evaluation of the MG loss in the upper lid (UL) and lower lid (LL) in the right eye (and also in the left eye, as a comparison) was performed with Cobra (CSO Srl, Italy). MG loss was measured by means of the Phoenix Meibography Software (CSO). In a second day NIBUT was assessed by means of Sirius (Scheimpflug with a Placido disc, CSO). MG loss were classified according to the scale proposed by Pult & Pult (2011)



RESULTS

As reported in the work by Pult et al (2012) MG loss was significantly higher in the lower lid (LL) than in the upper lid UL ($p < 0.001$). The correlation between loss in UL and LL is moderate ($r = 0.395$, $p = 0.002$).



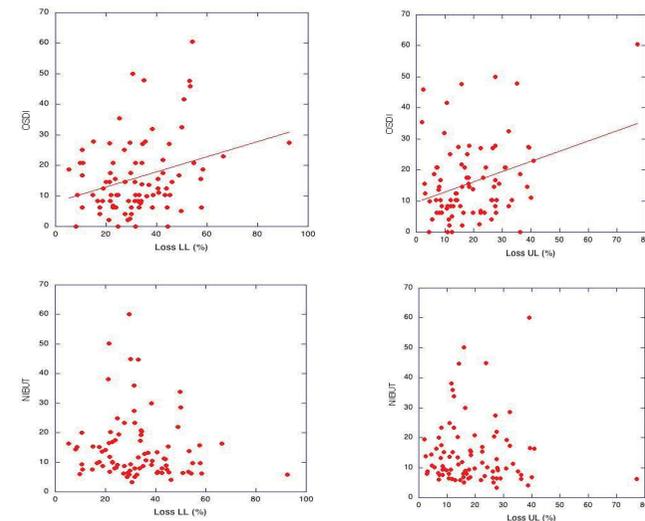
While the results for the LL are very close to Pult (but the 75 percentile of Pult is higher), the results for the UL are lower in our sample: this could be due to the youngest age of the subjects.

	Median (%)	Interquartiles(%)
MG LOSS UL	16.4	10.7-27.0
MG LOSS LL	31.3	22.2-42.1

	Median (%)	Interquartiles(%)
MG LOSS UL	26.9	11.3-39.7
MG LOSS LL	32.3	13.5-62.8

Loss in UL e LL is not different in relationship with gender (UL $p = 0.417$, LL $p = 0.566$) and wearing LAC (UL $p = 0.098$, LL $p = 0.975$), but the difference between median of loss in UL for wearer (11.9) and no wearer (17.5) should be investigated in future.

The comparison of MG loss with NIBUT and OSDI does not lead to a significant correlation (LL $r = -0.09$, UL $r = -0.01$ for NIBUT; LL $r = 0.302$, UL $r = 0.321$ for OSDI)



CONCLUSIONS

The major MG loss for LL in comparison with UL, as reported in other studies (Pult H et al, 2012) was confirmed. Contrary to other studies, no correlation for MG loss with OSDI and with NIBUT was found. This dissimilar findings could be due to the young age of the subject observed (mean 22.9 fl 3). For these subjects is questionable that MG loss can be taken as an indicator for DE. The minor loss in our sample in comparison with that of Pult et al could suggest that with age the situation is worsening especially in the UL.

REFERENCES

Khanal S, Tomlinson A, Mcfayden A, Ramaesh K. (2008). Dry eye diagnosis. IOVS, 49, 1407-14

Nichols KK, Nichols JJ, Mitchell GL, 2004. The lack of association between signs and symptoms in patients with dry eye disease. Cornea 23:762–70.

Pult H, Riede-Pult BH. Non-contact meibography: keep it simple but effective. Cont Lens Anterior Eye. 2011 Aug 30 [Epub ahead of print]

H.Pult, B.H. Riede-Pult, J.J.Nichols. Relation between upper and lower lids' meibomian gland morphology, tear film and dry eye, Opt. Vis. Sci, 89, 3 (2012) 310-315.