**Purpose:** The lower tear meniscus height (LTMH) has been reported to be strongly influenced by lid-parallel conjunctival folds resulting in misleading TMH readings (Fig. 1), while this was not found in the upper tear meniscus height (UTMH). \(^1\)

The aim of this study was to evaluate if the UTMH could be a potential surrogate of LTMH evaluation. Such this study investigated the relation between UTMH and LTMH and LIPCOF and dry eye status.

<table>
<thead>
<tr>
<th>LIPCOF Sum</th>
<th>Corrected Dry Eye Cutoff Values of TMH, mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.20</td>
</tr>
<tr>
<td>1</td>
<td>0.24</td>
</tr>
<tr>
<td>2</td>
<td>0.28</td>
</tr>
<tr>
<td>3</td>
<td>0.53</td>
</tr>
<tr>
<td>4</td>
<td>0.57</td>
</tr>
<tr>
<td>5</td>
<td>0.41</td>
</tr>
<tr>
<td>6</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Methods:
Following was evaluated in 20 subjects (15 female, mean age = 39.4 ±15.01 S.D. years):
- Both the central UTMH and LTMH of the right eyes was observed by digital slit lamp and the tearscope (Keeler Ltd, UK; Fig. 2).
- TMH of captured images was measured using Phoenix-Software (bon-optic, Germany).
- Non-invasive break-up time (Fig. 3).
- Lid-parallel conjunctival folds (LIPCOF; Fig. 4).
- Ocular Surface Disease Index (OSDI; Fig. 5)

Results:
- The mean OSDI score was 18.33 SD±13.13 and mean NIBUT was 8.96 ±5.01sec and LIPCOF Sum (nasal + temporal LIPCOF) was 2 ±6.
- The UTMH (UTMH=0.21 ±0.096) was not significantly different (paired t-test; p=0.086) to the LTMH (LTMH=0.22 ±0.125).
- LTMH was significantly correlated to LIPCOF Sum (Pearson correlation; r=0.500, p=0.0123, Fig. 6).
- No correlation were found between UTMH and LIPCOF Sum (r=0.128, p=0.301, Fig. 7).

Conclusions:
- The upper tear meniscus was not significantly different to the lower tear meniscus. Since the LTMH, was impacted by LIPCOF but not the UTMH the observation of the UTMH may be a better option to analyse tear film volume in LIPCOF patients.
- Neither the LTMH nor the UTMH was a predictor of dry eye in this cohort of population. However TMH still appeasers to be an important observation to evaluate tear film volume, esp. in the diagnoses of aqueous dry eye, but it's not a valuable dry eye screening test as NIBUT and LIPCOF.

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References