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Title:

The accommodative response during the fogging technique: assessment of the magnitude and application time of the fogging lenses.

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Preferred mode of presentation:

Poster ☐ Oral presentation [x]

Abstract body
Please include four distinct parts with the following headers: **Purpose, Methods, Results** and **Conclusions.**

Purpose: To analyse the accommodative response when different magnitudes of fogging lenses are used to control accommodation, with the aim to find which lens power and time of application are more suitable to achieve a successful relaxation of accommodation.

Methods: The accommodative response of thirty young adults from 18 to 30 years was studied while wearing fogging lenses of different powers. Lenses of +1D, +2D, +3D, +4D and +5D were presented in a random order in front of one eye for 60s. Changes in the refractive state of the occluded contralateral eye were monitored during 70s: 10s before the application of the lens and 60s while wearing it. Monitoring was done by means of a Hartmann-Shack aberrometer with a frequency of 10Hz. Obtained data was divided in

frames of 5s and the median of the refractive state of them was determined. Changes in accommodation were computed as the difference with the offset value, which was the median refractive state of the last 5s before the application of the fogging lenses. Negative values represented relaxation of accommodation. The value of the window with the maximum relaxation of accommodation was taken as the representative value of the whole measurement. Regarding the changes over time, the number of cases that achieved the maximum relaxation of accommodation in each time frame was counted.

Results: The mean change of accommodation±standard deviation for each lens was -0.18±0.18D for +1D, -0.14±0.16D for +2D, -0.07±0.18D for +3D, -0.09±0.17D for +4D and -0.06±0.21D for +5D. The Friedman's test was used for the statistical analysis, as distribution was not normal, showing that there were statistically significant differences between some lenses (p=0.013). Pairwise comparisons showed statistically significant differences between +1D and +5D lenses. 25 of 30 participants relaxed at least 0.12D with some lens, which can be considered clinically significant. Results regarding application time presented high dispersion with no clearly preferred time frame to achieve the maximum relaxation.

Conclusions: Fogging was effective for a vast majority of the sample, however the mean changes in accommodation were modest. There is a trend for the +1D lens to provide the maximum relaxation, although with no significant differences with the other lenses. Regarding application time, it cannot be concluded that there is a preferred timespan. Considering this, it seems that the solution for a good control of accommodation should be focused individually.

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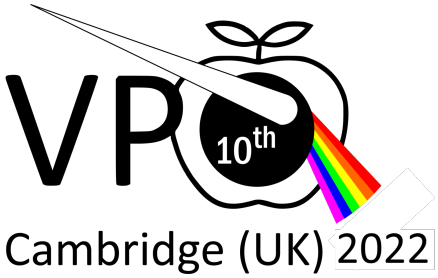
References

List references in order of appearance and use ref. number in square brackets to cite them in the abstract body.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