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PAPER Abstracts

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Investigation of the optimal method and viewing time for assessing conjunctival Lissamine Green staining

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Purpose: To investigate the optimal method and viewing time to evaluate conjunctival staining following Lissamine Green (LG) application.

Method: Twenty-two participants with a DEQ-5 score ≥ 6 were recruited to trial five different LG strip application methods on different days in a randomised order: A) application immediately after wetting, B) application 5 seconds after wetting, C) application 10 seconds after wetting, D) consecutive single application of sodium fluorescein followed by LG, and E) two applications of the same LG strip 5 seconds after wetting, one minute apart. Slit lamp photography of the conjunctiva was performed at the following timepoints: immediately following application, 30, 60, 90, and 300 seconds after application. Three experienced practitioners independently quantified the visible punctate spots, and grade the LG staining intensity within the images, which were randomly spread across picture matrices. Metrics were analysed in SPSS with a repeated measures ANOVA, with viewing time and application method as factors of interest.

Results: Both LG punctate spot count and LG staining intensity varied significantly

between the different methods ($F=6.292$, $P<0.01$ and $F=6.294$, $P<0.01$, respectively).

Using two applications of the same LG strip 1-minute apart resulted in the greatest values for punctate spot count and staining intensity, whilst the lowest values were reported using the LG strip 5 seconds after wetting. Time following application was also significant for both spot count and intensity, ($F=18.866$, $P<0.001$ and $F=11.325$, $P<0.001$, respectively), with the greatest values found immediately after application. There was no evidence of any interaction effect between time and method for either measure ($P>0.05$ for both).

Conclusions: The most optimal approach for visualising LG staining involves two applications of the same strip five seconds after wetting, one minute apart. It is also recommended to view the ocular surface immediately after application to visualise the extent and intensity of conjunctival staining.

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