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Service (sector) Glaucoma N° CEP

The Influence of Eyelid Holding in the Difference Between the Intraocular Pressures Measured with the Goldmann Applanation Tonometer and Tono Pen.

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Purpose: To study the influence of eyelid holding in the behaviour of intraocular pressure measured with the Goldmann applanation tonometer (G) and the Tono Pen (TP).

Materials and Methods: Tonometry was performed in both eyes, first with G and then TP, at 7 to 10 minute intervals. The eyelid was held only when necessary and this fact was recorded. In this study, only the first eye (the right one) has been analyzed. Statistical analysis were accomplished by means of the paired Student T test and polynomial regression.

Results: 202 eyes from 202 patients have been examined. They were divided in two groups: 82 needed eyelid holding (group A) and 120 did not (Group B). In relation to the difference of intraocular pressures measured with G and TP in each group, Group A presented higher amplitude of variation compared with group B ($-0.74\text{mmHg} \pm 2.48$; $0.13\text{mmHg} \pm 2.43$, respectively, $p=0,015$). Group A was significantly younger (mean= 34,9 years $\pm 22,8$ SD) than Group B (mean =50,7 years ± 18.8 SD) ($p<0,001$). The linear function was stronger to Group B ($r^2=70,7\%$ $p<0,001$) when compared to group A ($r^2=51,1\%$ $p<0,001$).

Conclusion: In comparative studies on tonometry in which G is the gold standard, it is necessary to consider eyelid holding.