

Intraocular pressure measurement with ocular response analyzer over soft contact lens.

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Abstract

PURPOSE:

To compare intraocular pressure (IOP) measured with ocular response analyzer (ORA) with and without soft contact lenses (CL) on eye.

METHODS:

Goldmann correlated intraocular pressure (IOP_g) and corneal compensated intraocular pressure (IOP_{cc}) were measured in 56 eyes of 28 subjects without any ocular pathology, using ORA. One eye was fitted with Narafilcon A (1-Day Acuvue True Eye, Johnson & Johnson) and the other eye with Nelfilcon A (Daily AquaComfort Plus, Ciba Vision), each with -3.00D and IOP_g and IOP_{cc} were again measured over CL. The variation in the IOP with and without CL was determined.

RESULTS:

Out of 28 subjects, 54% (15) were female. Mean age of the subjects was 29.4±9.8 years. Both the IOP_g and IOP_{cc} when measured with CL, were found statistically significantly lower than without CL ($p < 0.05$). In subjects wearing Narafilcon A lens, IOP_g and IOP_{cc} were found 0.88±2.04mmHg and 1.55±2.16mmHg lower than without CL, respectively. Similarly, with Nelfilcon A lens, IOP_g and IOP_{cc} were found to be 1.03±1.93mmHg and 1.62±3.12mmHg lower, respectively. IOP_{cc} was highly affected and underestimated by more than 3mmHg in upto 36% of the subjects.

CONCLUSION:

Measurement of IOP over minus (-3.00D) CL with ORA is dependent upon CL properties when measured in normal IOP population. It showed lower IOP over Narafilcon A and Nelfilcon A soft CL in comparison to the pressures measured without lenses. IOP_g was found less affected by CL. For the accurate measurement of IOP with ORA, CL should be removed.

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KEYWORDS:

Corneal compensated intraocular pressure; Goldmann correlated intraocular pressure; Ocular response analyzer; Soft contact lens