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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 (IOPg) and corneal compensated intraocular pressure (IOPcc) were measured in 56 eyes of 28 subjects without any ocular pathology, using ORA. One eye was fitted with Narafilecon 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 IOPg and IOPcc 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 IOPg and IOPcc when measured with CL, were found statistically significantly lower than without CL ($p < 0.05$). In subjects wearing Narafilecon A lens, IOPg and IOPcc were found 0.88±2.04mmHg and 1.55±2.16mmHg lower than without CL, respectively. Similarly, with Nelfilcon A lens, IOPg and IOPcc were found to be 1.03±1.93mmHg and 1.62±3.12mmHg lower, respectively. IOPcc 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 Narafilecon A and Nelfilcon A soft CL in comparison to the pressures measured without lenses. IOPg 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