

The association of oral contraceptive pills with increase in intraocular pressure: Time for pharmacovigilance to step in

NEW(S)

Oral contraceptive pills (OCP) are very frequently used as a safe and effective method for birth control, in India and worldwide. However, the American Academy of Ophthalmology, in New Orleans, came out with a research stating that women having these pills for three years or more are facing double the risk of developing glaucoma, which is one of the leading causes of blindness, and hence, it is raising a concern on the use of these supposedly safe oral contraceptive pills.^[1] The association between female sex hormones and intraocular pressure (IOP) changes has long been known.^[2,3] However, reports on the increased risk of open-angle glaucoma in females taking oral contraceptive pills for three years or more is a recent finding, which requires further studies to probe the causal association between estrogen, progesterone, and rise in IOP. This can be achieved through effective pharmacovigilance.

(RE)VIEWS

Estrogen has been known to cause a decrease in intraocular pressure, and hence, a decrease in the risk of development of open-angle glaucoma, especially when given as a part of a hormone replacement therapy in postmenopausal females. The possible mechanism being through the protective effect of estrogen on the estrogen receptors present on the retinal ganglion cells.^[4] Past studies have also shown that an estrogen-deficient state leads to increased aging of the optic nerve, which further predisposes to glaucoma.^[5] Additionally, both estrogen and progesterone are said to influence the outflow facility, hence, playing some role in the regulation of intraocular pressure.^[6] With recent reports coming up of

increased glaucoma risk in females on oral contraceptive pills, questions have been raised as to the exact role played by these hormones in the pathogenesis of glaucoma. A recent study announced by the American Academy of Ophthalmology indicates that glaucoma may be considered as part of the risk profile for a patient on oral contraceptive pills, together with other existing risk factors. However, the exact role of these hormones in intraocular pressure changes needs to be determined carefully.

The possible explanation behind this increased risk may be the fact that these oral contraceptive pills lead to flattening of estrogen levels in the bodies of the females receiving them, thus destroying the normal peak and trough pattern of the estrogen levels, leading to a virtual estrogen-deficient state.^[7] However, the exact relation between these hormones and the risk of open-angle glaucoma needs to be looked into further, and this can be effectively achieved by incorporating a proper pharmacovigilance program. Both the physicians prescribing OCPs and the patients receiving them need to be made aware of the concurrent risk of open-angle glaucoma, so that any minor change in IOP is reported, to demonstrate any association between the use of OCPs and the impending glaucoma risk, if any. Also, the chemists/pharmacists dispensing these hormone preparations must be enrolled under the pharmacovigilance program for the same.

To conclude, the association of OCPs with increased risk of glaucoma is a reason for alarm, especially in a country like ours, where OCPs are a very common and important method for birth control, and the population taking these pills is generally unaware of the impending risks. In this context, there is a dire need of pharmacovigilance, to assess the real correlation between the two. With proper/effective pharmacovigilance, the association between OCPs and IOP can be demonstrated and the risk avoided.

Also a routine ophthalmic consult (at least yearly) should be advised as a measure of monitoring for glaucoma in addition to the periodic testing of blood sugar, serum lipids, blood pressure (BP) etc.

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News and Views

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Access this article online	
Quick Response Code:	Website: www.jpharmacol.com
	DOI: 10.4103/0976-500X.149150

How to cite this article: Bhanwra S, Ahluwalia K. The association of oral contraceptive pills with increase in intraocular pressure: Time for pharmacovigilance to step in. *J Pharmacol Pharmacother* 2015;6:51-2.

Source of Support: Nil, **Conflict of Interest:** None declared.

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