



DOES POSTURE MATTERS

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ABSTRACT

Aim: To study effect of posture on absorption of 0.8%Tropicamide and 5%Phenylephrine eye drops on healthy individual

Materials and Methods: This is a prospective hospital based observational study conducted at the Department of Ophthalmology, Bhaskar general hospital, during the period of October 2021 to March 2022. 100 eyes of 50 healthy individuals who came for refraction to the department of Ophthalmology were selected for the study. Diabetics, patient with uveitis, Glaucoma and Optic neuritis and patients who had RAPD were excluded from the study. After explaining the procedure written informed consent was Obtained from the patients. Size of pupil was measured by calipers before instilling eye drops. Then One drop of 0.8%Tropicamide and 5% Phenylephrine was instilled in lower fornix of Right eye in the sitting posture by occluding the punctum. Pupillary size was measured after 5 minutes. Then patient was made to lie down and one drop of 0.8% Tropicamide and 5% Phenylephrine was instilled in the lower fornix of left eye by occluding punctum. Again pupillary size was measured after 5 minutes. **Results:** Mean size of pupil before instilling drug was 2.26 mm. Mean dilatation in sitting posture was 2.76 mm 5 minutes after instilling drops. Mean dilatation of pupil in supine posture 5 min after instilling drops was 3.96 mm. **Conclusion:** It is concluded that absorption of eye drops will be better in supine position when compared to sitting position.

KEYWORDS : Sitting, Supine, Tropicamide, Phenylephrine, Eye drops, Dilatation of Pupil, RAPD.

INTRODUCTION:

Drug instilled in the lower fornix enters the eye through cornea from pre-corneal tear film¹. Epithelium of Cornea allows Fat soluble drugs. Stroma of Cornea will favour water soluble drugs². Drug absorption is also regulated by duration of contact with Corneal epithelium³.

Contact of drug can be increased by - closing the eye, occluding the punctum⁴. Permeability is increased if epithelium is damaged or abraded⁵. Most ocular diseases are treated with topical application of eye drops. Antibiotics, antiglaucoma, steroid eye drops can also be used in this study but we have chosen mydriatics as we can see and document the action by measuring the pupillary dilatation.

Purpose: of study is to know the absorption of Mydriatic eye drops by comparing the dilatation of pupil achieved in Sitting and Supine posture in same individual.

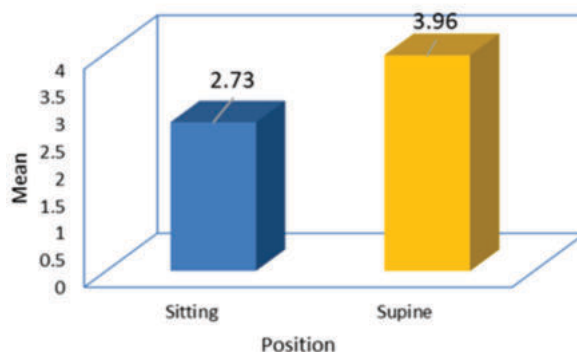
MATERIALS AND METHODS:

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RESULTS:

Mean size of pupil before instilling drugs was 2.26 mm. Mean dilatation in Sitting position was 2.76 mm with SD of 0.803. Mean dilatation in Supine posture was 3.96 mm. with SD of 1.124. The difference in amount of dilatation of pupil in sitting and supine posture was significant with the P value of < 0.001.

Pupil Dilatation (mm)**Fig. 1** Graph showing dilatation of pupil in sitting and supine position**DISCUSSION:**

On searching articles in different search engines, no similar study was found. There are articles depicting correct methods of instilling eye drops in Pharma journals⁶. Both postures had been described in different articles⁶. But no study was done to prove which posture is better for absorption of eye drops.

CONCLUSION:

In supine posture absorption of drug increases due to increase in contact of the drug between cornea epithelium. In supine position more drug will come in contact with the Corneal epithelium as drops instilled will be available in upper and lower conjunctival fornices for absorption. When compared to sitting posture where there is overflow of the drug and drug available for absorption is there only in lower conjunctival fornix due to gravity effect. So it is concluded that Eye drops instilled in Supine posture is better absorbed through Corneal epithelium. It is recommended to follow this posture for better absorption of Topical Eye drops.

Financial Interest : Nil

Conflict Of Interest: None

Institutional Ethics Committee approval Obtained for study

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