Mydriatics in retinopathy of prematurity

Dear Editor,

I read with great interest the article entitled "Cyclomydril® eye drops: An unusual contributing factor to postoperative apnoea in a neonate – A case report" by Pfister and Timmerman.[1] In this article they reported that anaesthetists should be aware of the potential dangers of Cyclomydril® drops and plan accordingly. Moreover, they mentioned that after use of cyclomydril drops, the infants should be followed for 24 hours for observation and apnoea monitoring. I congratulate them on their study. However, I have some comments with regard to their publication.

Firstly, although it depends on the ophthalmologist's preference, if retinopathy of prematurity that needs intravitreal injection is diagnosed, re-dilation of the pupils is not mandatory for intravitreal injections. In clinical practice, there is no need to observe the tip of the needle in the vitreous cavity. Relatively shorter needles may be used for the treatment.

Secondly, if dilation is needed, rather than using drops with cyclopentolate, the eye drops including tropicamide may be preferred because of their relatively smaller side-effect profile and shorter drug clearance time compared to cyclopentolate.[2] Tropicamide, with a concentration of 0.5%, also works and provides sufficient pupil dilation similar to cyclopentolate.[2] The shorter duration of its activity also shortens the follow-up period of the infants in intensive care units.

The authors reported that infants receiving Avastin® injections will require a general anaesthetic. However, in clinical practice, almost all of the intravitreal injections can be performed with topical anaesthetics.[3]

Finally, the infants who have apnoea already have comorbidities such as cardiac disorders, respiratory disorders requiring oxygen, necrotising enterocolitis, etc.[4,5] Therefore, particular attention should be taken in these patient populations where pupil dilation is required during fundus examination or intravitreal injection.

I hope that my comments are useful for clinicians.

Alparslan Sahin
Department of Ophthalmology, Memorial Dicle Hospital, Turkey

References

1. Pfister C, Timmerman K. Cyclomydril® eye drops: An unusual contributing factor to postoperative apnoea in a neonate – A case report. Southern African Journal of Anaesthesia and Analgesia. 2019;25(6):36-7.
2. Young TE. Topical mydriatics: The adverse effects of screening examinations for retinopathy of prematurity. NeoReviews. 2003;4:e163.
3. Şahin A, Gürsel-Özkurt Z, Şahin M, Türkcü FM, Yıldırım A, Yüksel H. Ultra-low dose of intravitreal bevacizumab in retinopathy of prematurity. Ir J Med Sci. 2018 May;187(2):417-421. https://doi.org/10.1007/s11845-017-1684-y.
4. Lee JM, Kodsi SR, Gaffar MA, Rubin SE. Cardiopulmonary arrest following administration of Cyclomydril eyedrops for outpatient retinopathy of prematurity screening. J AAPOS. 2014 Apr;18(2):183-4. https://doi.org/10.1016/j.jaapos.2013.11.010.
5. Mitchell A, Hall RW, Erickson SW, et al. Systemic absorption of cyclopentolate and adverse events after retinopathy of prematurity exams. Curr Eye Res. 2016;41(12):1601-1607.

Response from Authors

Dear Dr Alparslan Sahin

Thank you for your response to our case report.

We would like to respond with the following comments:

We agree that the decision for intravitreal injection will depend on the ophthalmologist's preference. This will also depend on the protocols for the region.

In Red Cross War Memorial Children's Hospital, South Africa, these neonates have their dilation in the neonatal ICU or in theatre with Cyclomydril® eye drops. It is the local practice for these neonates to have their Avastin® injections in theatre under a general anaesthetic.

Secondly, we acknowledge that the possible cause of the postoperative apnoea in this patient population is multifactorial. Therefore, we agree with your comment that particular attention should be paid to them when they receive their mydriatics, especially if they receive a general anaesthetic and particularly in the postoperative period.

Kind regards

Dr Claire Pfister and Dr Kerry Timmerman