Current practice of vitreoretinal surgeons for dilated fundoscopy

Bethan McLeish[1], Anshu Sachdev[1], Kamaljit Singh Balaggan[1]
[1] Wolverhampton and Midland Counties Eye Infirmary, The Royal Wolverhampton NHS Trust, Wolverhampton, United Kingdom

The Royal College of Ophthalmologists Annual Congress 24–27 May 2021
The Royal Wolverhampton NHS Trust

BACKGROUND & AIMS

Topical mydriatic eyedrops are commonly used to elicit pupillary dilatation in order to improve visualisation of the fundus. This is particularly important for patients presenting with **photopsias and floaters** (P+F), due to the concern of retinal tears or detachment as a cause of these symptoms.

There is an increasing role of community optometrists seeing patients presenting with P+F, with the aim of discharging uncomplicated Posterior Vitreous Detachments in the community and referring only significant treatment-requiring pathology.

There are currently no published guidelines regarding mydriatic(s) or lens choices for performing **peripheral dilated fundoscopy**. Establishing a consensus of common practice will be beneficial in guiding multidisciplinary professionals in their examination practice.

The objective of this study was to evaluate the practice preference of vitreoretinal surgeons for performing peripheral dilated fundoscopy, in particular for patients with (P+F).

METHODS

A cross-sectional survey was distributed to Consultant members of British and Eire Association of Vitreoretinal Surgeons (BEAVRS) between October 2018 and December 2019.

The consultant vitreoretinal (VR) surgeons were asked for their recommendations of best practice for performing peripheral dilated fundoscopy for groups differing according to:

- Age
- Pregnancy
- Comorbidities: Cardiovascular disease and diabetes mellitus

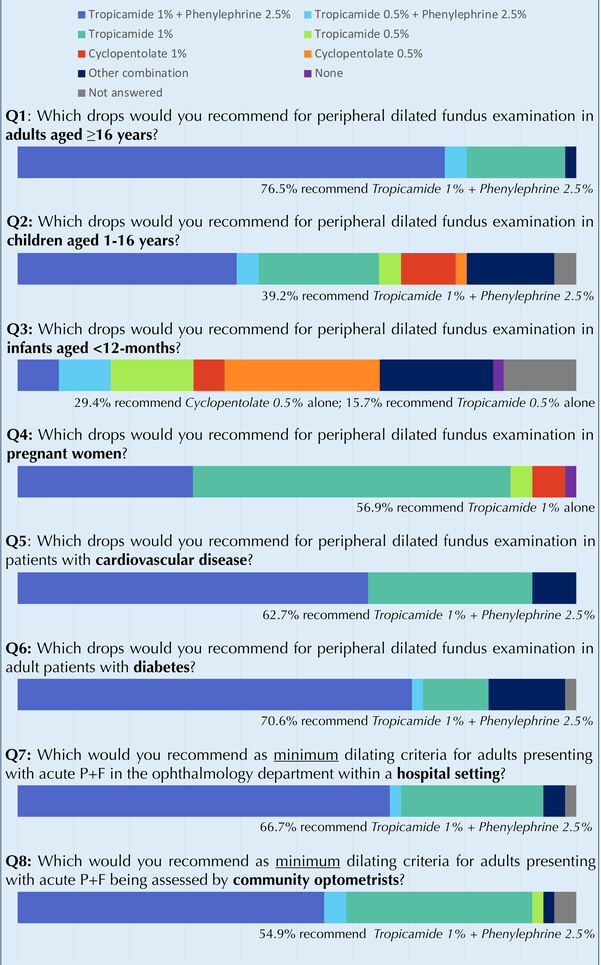
Consultants were also asked their recommendations for lenses when performing peripheral dilated fundoscopy, macula examination and binocular indirect ophthalmoscopy as well as their practice for assessing patients presenting with P+F.

RESULTS

51 consultant VR surgeons completed the survey.
Their responses are summarised in *Figures 1, 2* and *3*.

RESULTS

Figure 1: Preferences for mydriatic drops amongst VR surgeons



RESULTS

Figure 2: Preferences for lenses amongst VR surgeons

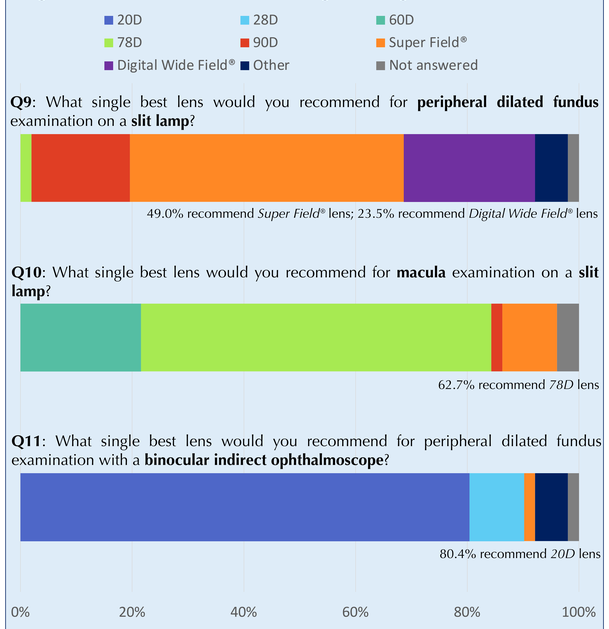
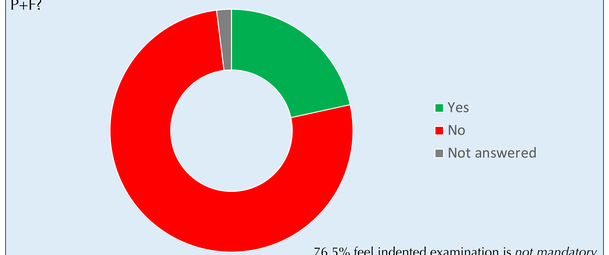


Figure 3: Preference for binocular indented examination amongst VR surgeons



DISCUSSION

The combination of tropicamide 1% + phenylephrine 2.5% is the most common preference for mydriatic drops amongst VR surgeons for performing peripheral dilated fundoscopy in adults and children.

In infants <12 months old, cyclopentolate or tropicamide alone are preferred. This is likely due to reports of significant adverse effects in infants secondary to systemic absorption of phenylephrine drops.(1) Similarly in pregnancy, tropicamide alone without phenylephrine was preferred. Use of phenylephrine eye drops in pregnancy is recommended only if benefits outweigh the risks.(2)

In cardiovascular disease, some VR surgeons avoid use of phenylephrine drops. In a follow-up free-form question, many VR surgeons referenced their awareness of adverse cardiovascular effects associated with phenylephrine eye drops.(3) However, a recent systematic review found that phenylephrine 2.5% leads to no clinically relevant changes in heart rate or blood pressure, thus it is safe to use in routine clinical use.(4)

VR surgeons were slightly less likely to mandate phenylephrine use by community optometrists in comparison to use in the hospital setting. It is unclear why but may be due to a perceived, albeit unfounded, concern of possible cardiovascular events occurring in the community versus the hospital environment.

The majority of VR surgeons do not believe binocular indented examination is mandatory for all patients presenting with P+F. Some VR surgeons commented that indented examination should be performed according to the level of clinical suspicion, or that adequate examination could be performed without indentation.

CONCLUSION

This study represents the first attempt to establish the current preferred practice for peripheral dilated fundoscopy. A combination of **tropicamide 1% and phenylephrine 2.5%** was most preferred for peripheral dilated fundoscopy in adults and children.

With the increasing role of community optometrists in managing patients with P+F, it is important to set practice standards to minimise non-detection of treatment-requiring pathology. A similar study is underway regarding the current practice of community optometrists, in order to detect differences in examination preferences.

REFERENCES

1) Kremer LJ, Reith DM, Medlicott N, Broadbent R. Systematic review of mydriatics used for screening of retinopathy in premature infants. BMJ Paediatr Open. 2019 May 9;3(1):e000448
2) British National Formulary. Phenylephrine hydrochloride. Available at: https://bnf.nice.org.uk/drug/phenylephrine-hydrochloride.html
3) Sharaglia F, Mores N, Garra R, Giuratrabocchetta G, Lepore D, Molle F, Savino G, Piastra M, Pulitano' S, Sammartino M. Phenylephrine eye drops in pediatric patients undergoing ophthalmic surgery: incidence, presentation, and management of complications during general anesthesia. Paediatr Anaesth. 2014 Apr;24(4):400-5.
4) Stavert B, McGuinness MB, Harper CA, Guymer RH, Finger RP. Cardiovascular Adverse Effects of Phenylephrine Eyedrops: A Systematic Review and Meta-analysis. JAMA Ophthalmol. 2015 Jun;133(6):647-52.