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Authors: Emily C. Pieterse¹ and Rohan Hughes¹

¹School of Optometry and Vision Science, Queensland University of Technology, Victoria Park Road, Kelvin Grove, Queensland, Australia.

Presenting author email: e.pieterse@qut.edu.au

Title: Patient characteristics and determinants of myopia control intervention selection in an Australian University-based clinic

Purpose: To determine whether patient characteristics influence choice of myopia control treatment.

Methods: Retrospective case review of treatment selected by 90 first time patients examined within a 6-month period at a university-based myopia clinic. Spherical equivalent refraction (SER), age, age of onset, axial length (AxL), parental myopia, ethnicity and progression rate were obtained to determine influence on treatment selection [atropine, orthokeratology (OrthoK), multifocal contact lenses (MFSCl), MiSight contact lenses, observation only, and undecided].

Results: Patient age, SER, AxL and progression all significantly affected treatment choice ($p < 0.05$). The atropine group were significantly younger (10.0 ± 3 yrs) than the OrthoK (13.2 ± 3 yrs) and MFSCl (14.8 ± 2 yrs) groups. The MFSCl group had significantly greater SER and AxL (-6.3 ± 3 D, 26.6 ± 1 mm) than the atropine (-3.4 ± 2 D, 24.7 ± 1 mm), OrthoK (-3.0 ± 1 D, 25.0 ± 1 mm), and observation only (-3.1 ± 2 D, 24.5 ± 1 mm) groups. Pre-treatment progression rate was significantly faster in those that chose atropine (-1.0 ± 0.5 D/yr) and OrthoK (-0.9 ± 0.4 D/yr) than those who were left under observation only (-0.3 ± 0.4 D/yr). Treatment choice was not significantly affected by parental myopia, age of onset, or ethnicity.

Conclusions: On average, patients who commenced atropine were younger than those who chose OrthoK or MFSCl, which possibly reflects patient and parent attitudes towards contact lens wear in children. MFSCl wearers had the highest average SER, potentially due to their older age and the extended parameters available for high myopia correction in MFSCls.