

TWELVE-MONTH OUTCOMES OF SEVEN SCHLEMM'S CANAL MIGS DEVICES: REAL-WORLD COMPARATIVE DATA FROM AN NHS GLAUCOMA CENTRE

D.Antunes, I.Fazal, J.Chan, M.Pantelidou, D.Lolos, A.Hussain, C.Dimitriou
Colchester Eye Centre

Introduction

Minimally invasive glaucoma surgery (MIGS) is gaining popularity in the treatment of primary open-angle glaucoma (POAG), offering a safer profile and quicker recovery than traditional surgery. However, limited comparative data exist to guide equitable and effective treatment selection. This study presents 12-month real-world outcomes from a seven-arm comparison of Schlemm's canal-based MIGS performed in a UK NHS glaucoma centre.

Methodology

01

This study employed a retrospective analysis at the Colchester Eye Centre, East Suffolk and North Essex NHS Foundation Trust, UK.

02

A total of 200 patients with POAG underwent one of seven Schlemm's canal-based MIGS procedures, either alone or combined with cataract surgery: iStent (n=30), OMNI Surgical System without goniotomy (n=31), OMNI with goniotomy (n=27), Hydrus Microstent (n=39), Elios (n=23), TrabEx (n=15), and iTrack (n=35).

03

Outcomes assessed included intraocular pressure (IOP) and the number of topical glaucoma medications at baseline, 6 months, and 12 months.

04

Statistical comparisons were made within and between groups, with significance set at $p < 0.05$.

05

There is a potential risk related to use of less effective MIGS devices which could result in sub-optimal patient care. It should be noted there is currently no global consensus on which device is the most advantageous. The benefit of trialling multiple devices allows us to gain further insight into answering this question.

Results

- All devices achieved sustained IOP reductions at 12 months.
- The largest mean reductions in IOP were observed with OMNI without goniotomy (-5.69 mmHg, $p=0.002$), iTrack (-4.47 mmHg, $p=0.001$), and iStent (-4.33 mmHg, $p<0.001$).
- The greatest reductions in medication burden were seen with OMNI without goniotomy (-1.71 drops), Elios (-1.36 drops), TrabEx (-1.36 drops), and iTrack (-1.13 drops), all statistically significant ($p<0.01$).
- Hydrus showed moderate IOP reduction but did not significantly reduce medication use.
- Inter-device comparison revealed a significant difference in drop reduction at 6 months ($p=0.017$).

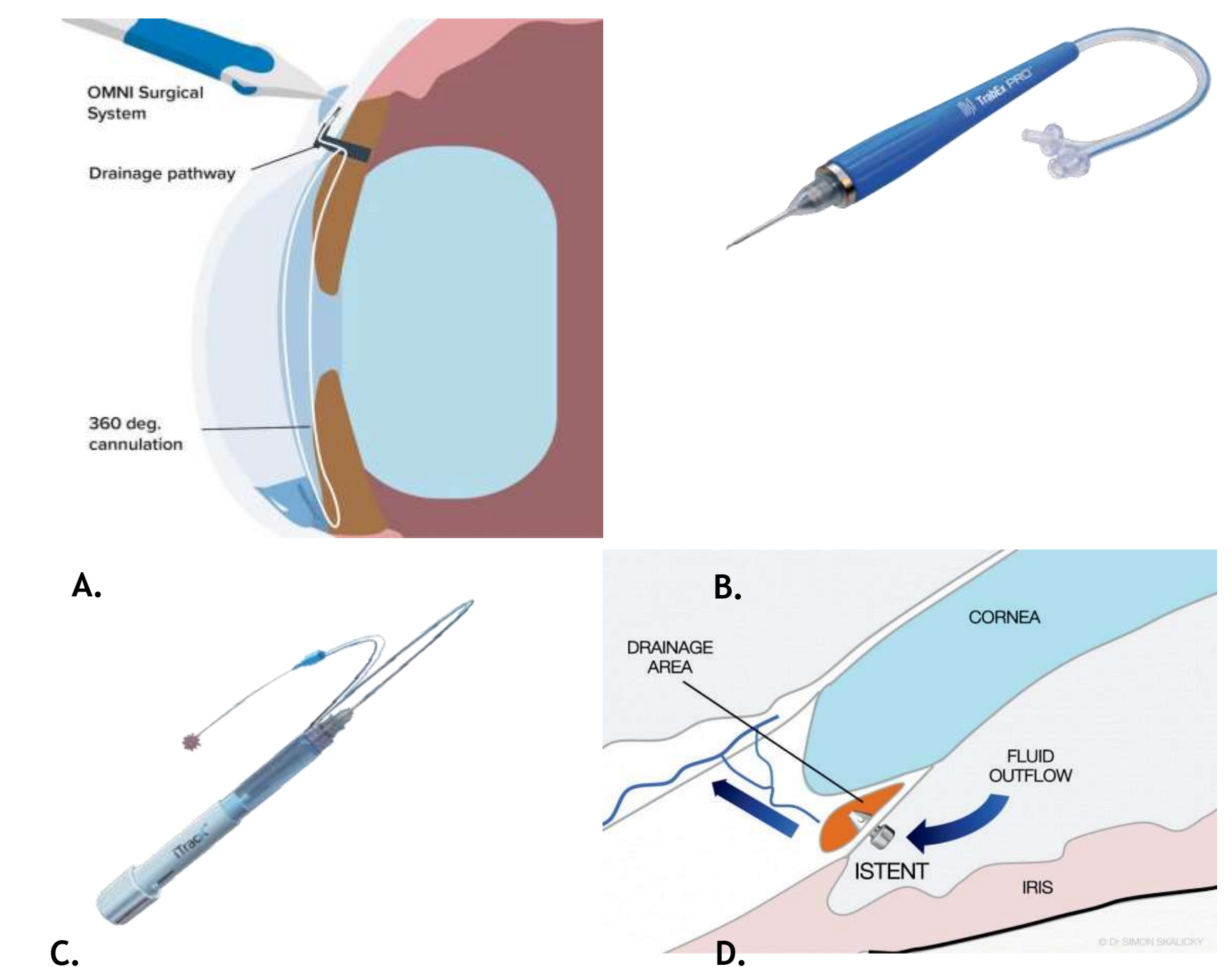
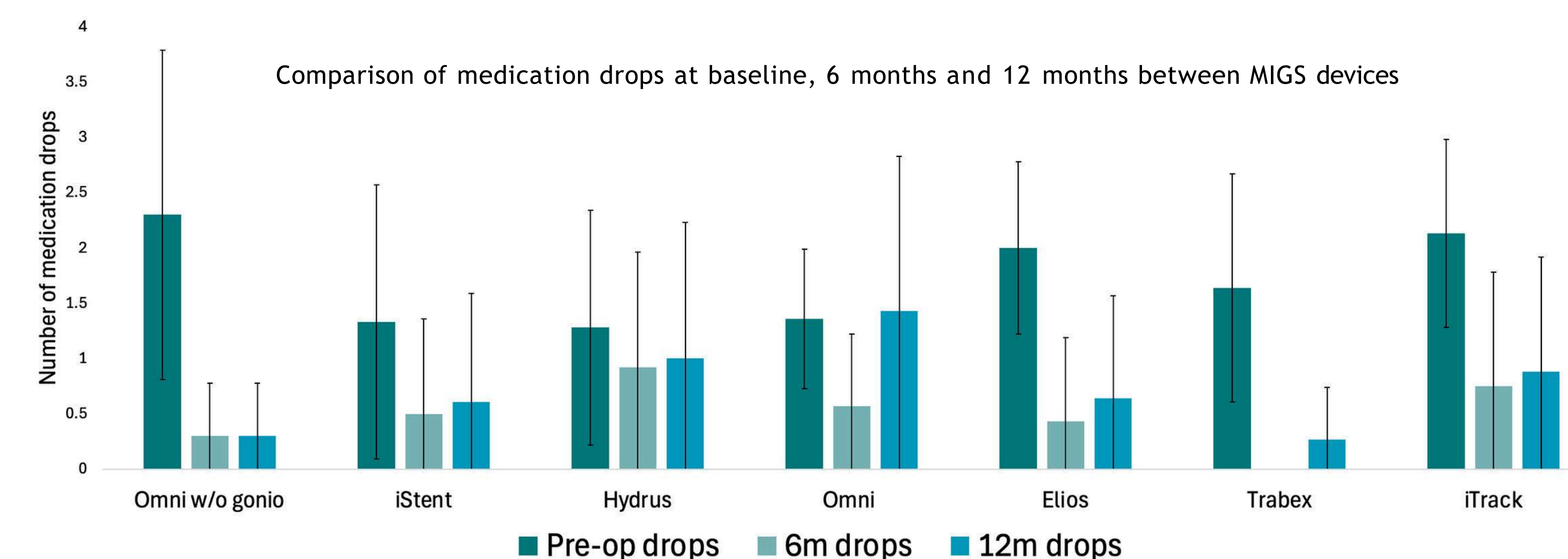
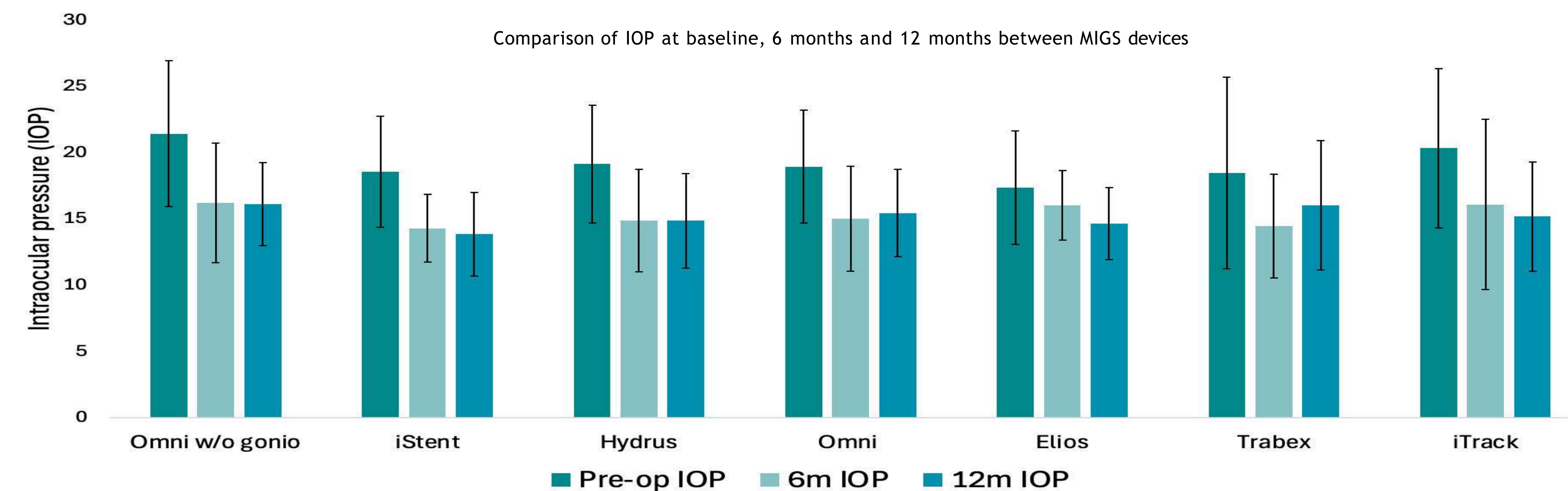


Figure 1: Illustrated are the MIGS devices with the most favourable outcomes, A. OMNI Surgical System (without goniotomy) ¹, B. Trabex ^{2,3}, C. iTrack ⁴ and D. iStent ⁵

Conclusion

This is the largest known comparative dataset (n=200) of Schlemm's canal-based MIGS in an NHS setting. The outcomes of this project support personalised, data-driven surgical planning and may guide earlier, equitable glaucoma intervention. One of the key findings being that the OMNI Surgical

System without goniotomy demonstrated the greatest reduction in both medication burden and IOP at 12-months.

The impact of this project includes increased use of MIGS devices with the most encouraging results at the ESNEFT Colchester Eye Centre, with an aim to re-audit to assess progress and effectiveness of MIGS devices.

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