

A real world comparison of iStent combined with Phacoemulsification and Endocyclophotocoagulation (ICE2) with PreserFlo (PMS) and XEN-45 implants in the UK short- and long-term outcomes

The A- Team



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Aims:
to compare the effects and complications of



\+ ECP

iStent combined with phacoemulsification and Endocyclophotocoagulation (ECP) (ICE2)



Preserflo Microshunt
PMS



XEN-45 implants

a real world analysis

Methods:
It is a retrospective case series of either of the three MIGS procedures (ICE2, PMS and XEN-45), with or without Phacoemulsification cataract surgery in a single centre with follow ups included up to two year.

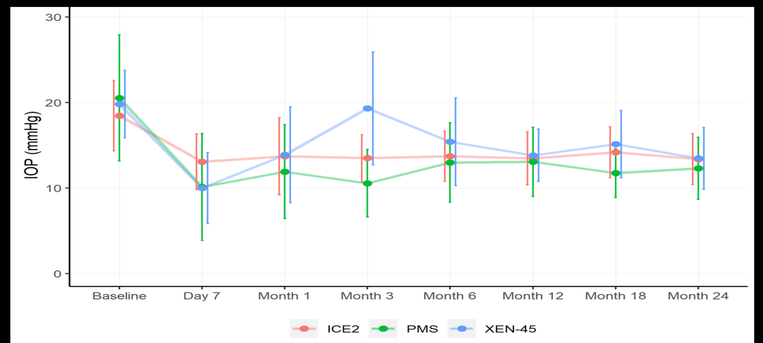


Figure 1. Average and standard deviation IOP measurements (mmHg) across treatment groups over the 24-month study period.

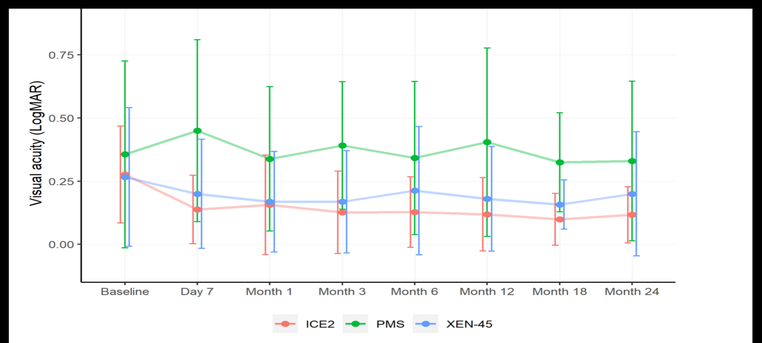


Figure 2. Average and standard deviation BCVA measurements (LogMAR) across treatment groups over the 24-month study period.

		ICE2	PMS	XEN-45
Timepoint	Baseline	2.0±1.0	2.9±0.8	2.9±0.7
	Day 7	1.8±1.1	0.3±0.1	0.0 ± 0.0
	Week 5	1.6±1.1	0.4±0.9	0.3 ± 0.5
	Month 3	1.5±1.1	0.7±1.2	0.3±0.8
	Month 6	1.7±1.1	1.5±1.3	1.1±1.0
	Month 12	1.3±1.1	0.8±1.1	1.6±0.8
	Month 18	1.2±1.1	1.6±0.9	1.0±1.7
	Month 24	1.4±1.1	0.9±1.1	1.9±1.1
Average reduction from baseline	Day 7	0.6 p = 0.001*	2.6 p = <0.001*	2.9 p = <0.001*
	Month 12	0.7 p = <0.001*	1.3 p = <0.001*	1.3 p = <0.001*
	Month 24	0.6 p = <0.001*	2.0 p = <0.001*	1.0 p = 0.001*

Mean and standard deviation (±) number of anti-glaucoma medications between groups over 24-months

	ICE2 (N= 162)	PMS (N = 48)	XEN-45 (N = 37)
Day 7	0	0	5FU – 1 (2.7%) Buttonhole suture + AMT – 1 (2.7%)
Month 1	0	Bleb revision – 1 (2%)	5FU - 1 (2.7%) Bleb needling – 4 (11%)
Month 3	0	5FU – 12 (27.2%) Bleb revision – 1 (2.1%)	5FU - 5 (13.5%) Bleb needling - 2 (5.4%) Bleb revision – 2 (5.2%) Xen ligation - 1 (2.7%)
Month 6	0	Bleb needling - 2 (4.2%) Bleb revision – 1 (2.1%) Intravitreal antibiotics – 1 (2.1 %)	5FU - 3 (8.1 %) Bleb needling - 4 (10.8%) SLT – 1 (2.7%)
Month 12	0	Bearveldt tube - 1 (2.1%) Bleb revision- 1 (2.1%) Replacement – 1 (2.1%)	Bleb revision - 1 (2.7 %) Bleb needling – 1 (2.7%) SLT - 1 (2.7 %)
Month 18	0	0	Bleb needling - 1 (2.7%) SLT – 1 (2.7%)
Month 24	SLT - 1 (0.6%)	0	SLT – 1 (2.7%) XEN removal plus PMS – 1 (2.7%)

Post-operative surgical/laser interventions between groups.

In summary, this retrospective review demonstrates the clinical effectiveness and safety profile of PMS, XEN-45 and ICE2.
PMS showed the maximum effect in reducing IOP among patients with more severe stage disease.
ICE2 was associated with fewer post-operative complications compared to PMS and XEN-45 but is typically performed in patients with less severe visual field damage using fewer anti-glaucoma medications.
PMS was associated with fewer post-operative bleb manipulations compared with XEN-45 after 24-months, suggesting it is advisable to warn patients undergoing XEN-45 about the likelihood of repeated intervention.