Three Year Outcomes Of Preserflo Microshunt With Mitomycin C At Manchester Royal Eye Hospital

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Background: The preserflo microshunt (Santen Inc.) was previously known as the Innfocus microshunt and involves creating a filtering bleb through an ab externo approach. There has been promising results up to 5 year outcomes[1] , however has been shown to be inferior to trabeculectomy at 24 months[2]. The purpose of this study is to report the baseline characteristics and surgical outcomes of the preserflo microshunt in patients with glaucoma at a tertiary centre.

Methods: Retrospective case series of consecutive patients who underwent preserflo microshunt surgery at Manchester Royal Eye Hospital. Baseline characteristics, pre-operative and post-operative IOP, number of glaucoma medications, visual acuity, and adverse events were recorded. Data was analysed with SPSS v26.

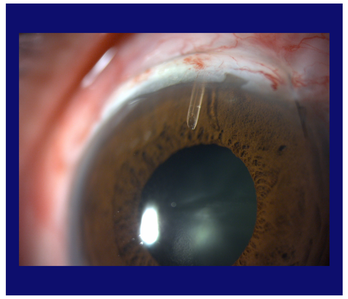


Image 1. Preserflo microshunt

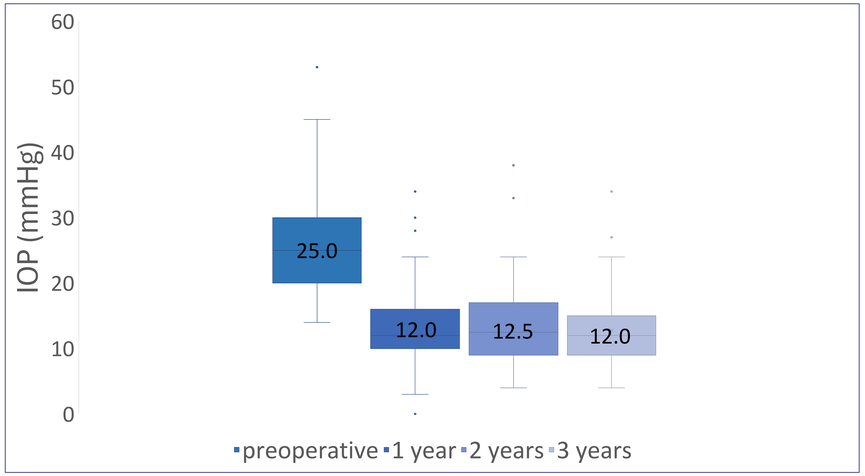


Figure 1. IOP (mmHg) preoperative and postoperative

Age at surgery	65.2 ± 16.8 (21-91) years
Sex	48.6% Female
IOP at baseline	25.8 ± 7.8 (14-53) mmHg
Best Corrected Visual Acuity at baseline	logMAR -0.16 to HM
No previous glaucoma surgery or laser	48%
Glaucoma type	59% OAG and 28% uveitic glaucoma

Table 1. Baseline demographics

Qualified Success	
IOP ≤ 21 mmHg ± medication	90%
IOP ≤ 18 mmHg ± medication	85%
IOP ≤ 15 mmHg ± medication	77%
Failure	
IOP > 21 mmHg or ≤ 5 mmHg, Persistent hypotony with anatomic changes, loss of light perception or need for a second surgery	10%
IOP > 18 mmHg or ≤ 5 mmHg, Persistent hypotony with anatomic changes, loss of light perception or need for a second surgery	15%
IOP > 15 mmHg or ≤ 5 mmHg, Persistent hypotony with anatomic changes, loss of light perception or need for a second surgery	23%

Table 2. Success rate of preserflo microshunt at last visit

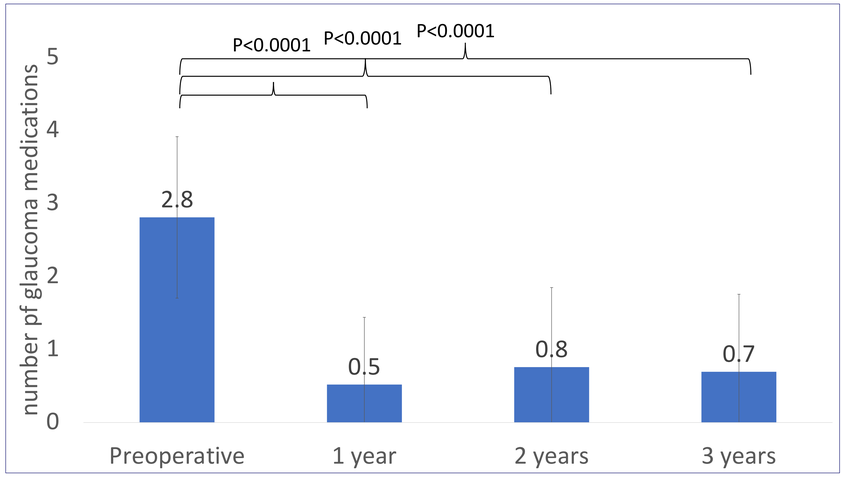


Figure 2. Number of medications preoperative and postoperative

	Adverse event	n
Early	Postop hyphaema	3
	Revision of preserflo +/- needling	1
	Surgery - tube	1
	Blebitis - mild	1
	Cystoid macula oedema (CMO)	1
	Hypotony - early	2
Late	Hypotony - late	1
	Revision of preserflo +/- needling	5
	Surgery - tube	8
	Surgery- trabeculectomy	1

Table 3. Post operative ocular adverse events, early and late

Note: Death (from non-ocular causes) 11 patients, within 1 year post op – 5 patients, 2 years post op – 3 patients, and 3 years post op – 3 patients

Results: 162 patients who underwent preserflo microshunt surgery with 0.4-0.5mg/ml MMC were followed up at 1 year post-operation, 91 patients at 2 years and 69 patients at 3 years. The mean baseline IOP of 25.8 ± 7.8 (14-53) (range 14-53) mmHg was reduced at each year post-operatively (p<0.0001). The mean post-operative IOP at 1 year was 13.3 ± 5.0, at 2 years 13.3 ± 5.7 and at 3 years 12.8 ± 5.1 mmHg. The mean number of pre-operative glaucoma medications was 2.8 ± 1.1 (range 0-5) compared with 0.5 at 1 year, 0.8 at 2 years and 0.7 at 3 years (p<0.0001). There was no significantly different change in BCVA at last follow-up compared to preoperative BCVA.

Conclusion: Our study has shown good IOP control with preserflo microshunt surgery at 3 years, which is comparable with studies in the literature. Appropriate patient selection was a key factor in success of surgery.

References: 1. Batlle JF, Corona A, Albuquerque R. Long-term Results of the PRESERFLO MicroShunt in Patients With Primary Open-angle Glaucoma From a Single-center Nonrandomized Study. J Glaucoma. 2021 Mar 1;30(3):281-286. doi: 10.1097/IJG.0000000000001734. PMID: 33137019; PMCID: PMC8041565.

2. Panarelli JF, Moster MR, Garcia-Feijoo J, Flowers BE, Baker ND, Barnebey HS, Grover DS, Khatana AK, Lee B, Nguyen T, Stiles MC, Sadruddin O, Khaw PT; INN005 Study Group. Ab-Externo MicroShunt versus Trabeculectomy in Primary Open-Angle Glaucoma: Two-Year Results from a Randomized, Multicenter Study. Ophthalmology. 2024 Mar;131(3):266-276. doi: 10.1016/j.ophtha.2023.09.023. Epub 2023 Sep 27. PMID: 37769852.