Novel Therapeutic Strategies To Restore Vision In Ocular Hypotony (STRETCH): Results from a Prospective Pilot Series

Karla OM Dias[1], Rana Khalil[2], Jamal Riymon Kawa[1], James Gooch[1], Antonio Calcagni[1], Harry Petrushkin[1]

1: Moorfields Eye Hospital NHS Foundation Trust, London; 2: Tennent Institute of Ophthalmology, Glasgow

THE WHY

- Patients with chronic hypotony are at risk of permanent visual loss from a variety of sequelae which lead to phthisis
- There is no standardised treatment approach
- Previous reports suggested intravitreal injection of viscoelastic

THE HOW

- Prospective case series
- 8 eyes; Dec 2021-July 2023
- Eyefill HD (Bausch + Lomb; 2% HPMC) 3.5mm behind the limbus in pseudophakic eyes
- Inclusion criteria: IOP <6.5mmHg for >3 months (>6 months if glaucoma surgery), ≥1 structural change, reasonable visual potential (flash VEP/full field ERG)

RESULTS

Table 1 Demographics

Eye number	Eye	Sex	Age	Diagnosis	# injections	Average volume injections (µl)
1	Left	F	42	CAU	4	650
2	Left	M	57	Sarcoid	10	487
3	Right	F	38	CAU	11	169
4	Left	F	38	CAU	4	94
5	Right	F	21	JIA	8	188
6	Left	M	32	CAU	8	100
7	Left	F	80	Stickler's	11	241
8	Left	F	64	CAU	13	242

RESULTS

- *Median: # injections/eye 9; volume/eye 214µl; age first injection 40 years*

Fig 1 Change in BCVA over 12 months
(87.5% eyes improved BCVA ≥1 line; average ↑4.125 lines)

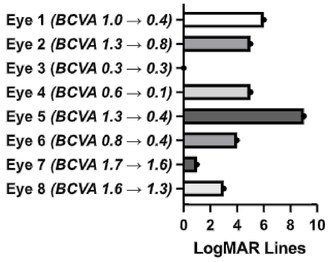


Fig 2 Change in CMT over 12 months (median ↓126µm)

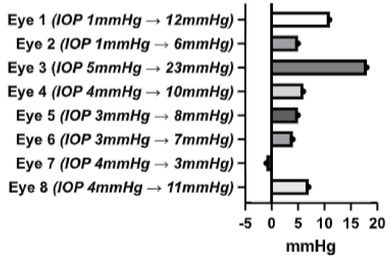
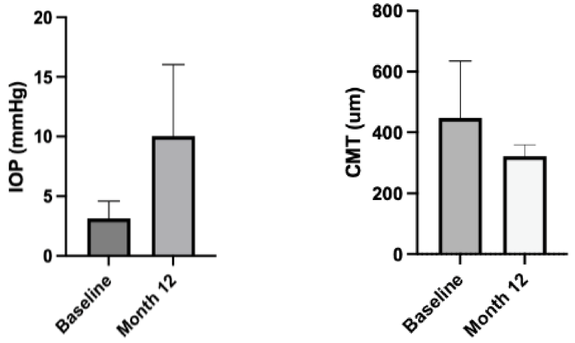


Fig 3 Change in IOP over 12 months
(87.5% eyes increased, median ↑5.5mmHg)



RESULTS

Fig 4 Change in axial length over 12 months
(75% eyes increased; median ↑1mm)

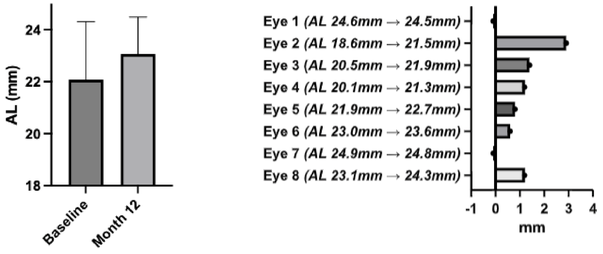


Table 2 Improvement in Clinical Markers

	Initial	12 months
Median BCVA	1.15 LogMAR (range: 0.3-1.7LogMAR)	0.4 LogMAR (range: 0.1-1.6LogMAR)
Median IOP	3.5mmHg (range: 1 - 5mmHg)	9mmHg (range: 3 - 23mmHg)
Median CMT	379µm (range: 227 - 779µm)	315µm (range: 277 - 393µm)
Median axial length	22.4mm (range: 18.6 - 24.9mm)	23.1mm (range: 21.5 - 24.8mm)

CONCLUSIONS

- Additional research in the form of RCTs is required to standardise treatment protocol, identify predictors of response, and assess long-term outcomes
- Intravitreal HPMC shows promising results in the management of chronic hypotony