Effectiveness of intervention for Convergence Insufficiency: A prospective study evaluating clinical outcomes and health-related quality-of-life using AS20

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Introduction

Convergence insufficiency (CI) is a common condition that can impair visual performance and comfort during close visual work.[1] It is prevalent in approximately 3% to 5% of the adult population.[2]

Objectives

To evaluate the effectiveness of interventions on clinical outcomes and health-related quality-of-life using the Adult Strabismus-20 (AS20) questionnaire in patients with CI.

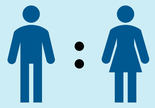
Methods

- Prospective patient database from Aug. 2014 to Aug. 2022
- Demographics, interventions and outcomes collected
- Interventions: home-based convergence therapy, base-in (BI) prism, botulinum toxin injections, rectus muscle resection.

Results: Demographics

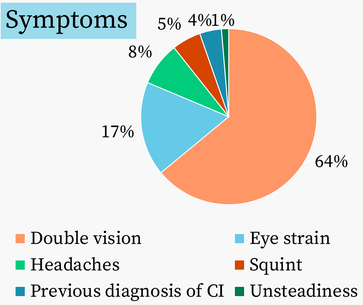
Cohort:	75 patients
Mean age, years:	47.2 ± 24.7 years
Primary CI:	96%
Secondary CI:	4% (3 Parkinson's disease)
BCVA, LogMAR:	Pre-management: 0.08
	Post-management: 0.06

Gender, n:



23 : 52

Symptoms



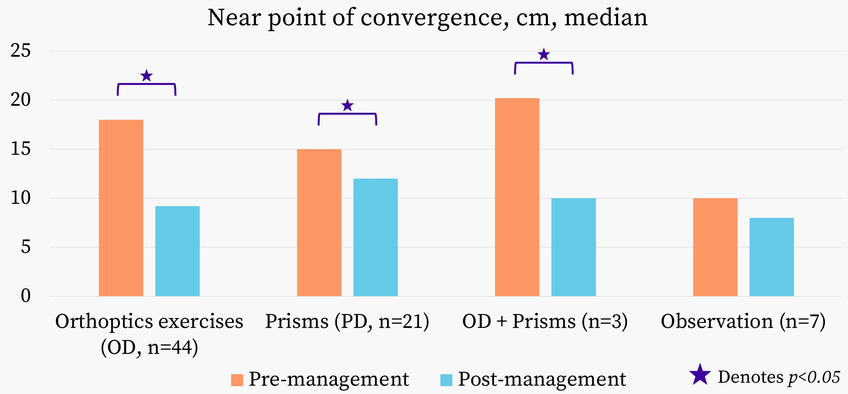
Referral source	
Optometrist	53 (71%)
General practitioner	15 (20%)
Others (inc. internal referral, emergency department)	7 (9%)

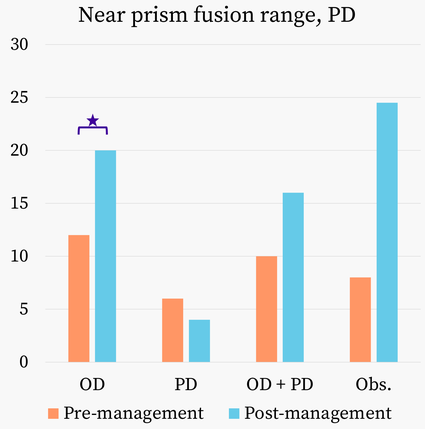
Waiting time to appointment: 9.1 ± 6.3 weeks

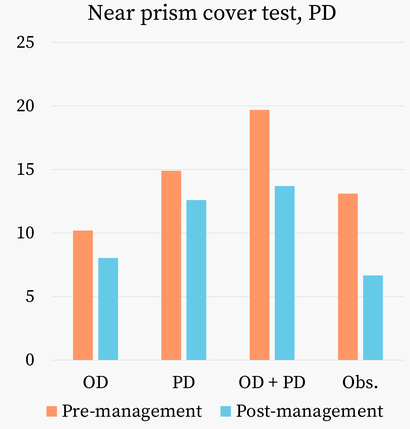
Results: AS20

(mean±SD)	Pre-management (n=73)	Post-management (n=20)	p
Psychosocial	89.6 ± 16.8	95.6 ± 8.31	0.1143
Functional	49.0 ± 22.4	70.1 ± 20.8	**0.0004**

Results: Cohorts of initial management







Results: Outcomes

	OD (n=44)	Prisms (n=21)	OD + Prisms (n=3)	Observation (n=7)
Discharged	27 (61%)	14 (67%)	3 (100%)	3 (43%)
Do not attend (DNA)	16 (36%)	2 (9%)	0	1 (14%)
Deceased	0	5 (24%)	0	3 (43%)
Rereferred to department after discharge	1 (2%)	0	0	0
Follow-up period, weeks [mean±SD (range)]	8.72 ± 10.6 (0 - 51)	14.4 ± 16.7 (0 - 55)	20.0 ± 7.0 (12 - 25)	2.67 ± 3.01 (0 - 8)

Conclusions

- Valuable insight into real-life tertiary adult CI management
- Improvement in health-related quality-of-life and clinical outcomes
- Future research: multi-centre collaboration to achieve larger sample and prospective comparison of treatment modalities
- Recommendations: Implementing a quality-of-life questionnaire specific for CI to complete at diagnosis & after completion of treatment; departmental protocol to standardise step-approached management of CI

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References:

1. Chang MY, Morrison DG, Binenbaum G, Heidary G, Trivedi RH, Galvin JA, et al. Home- and Office-Based Vergence and Accommodative Therapies for Treatment of Convergence Insufficiency in Children and Young Adults. Ophthalmology. 2021;128(12):1756-65.
2. Nabovati P, Kamali M, Mirzajani A, Jafarzadehpur E, Khabazkhoob M. The effect of base-in prism on vision-related symptoms and clinical characteristics of young adults with convergence insufficiency; a placebo-controlled randomised clinical trial. Ophthalmic and Physiological Optics. 2020;40(1):8-16.