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Efficacy of Citicoline as an Adjuvant to Patching in Unilateral Amblyopia

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Abstract

***Background*:** The present study aimed to study the role of citicoline as an adjuvant to patching in unilateral Amblyopia.

Methodology: The study was conducted at atertiary care centred ,during the study period of 1 year on 50 patients presenting with mild to moderate amblyopia. Patients were subjected to detailed history and ocular examination using a slit lamp.

Results: 24% patients belonged to the age group of 7-8 years of age. About 52% cases were females. Citicholine with patching therapy was used in 25 cases (36% strabismus cases, 32% anisometropia and 32% combined) and patching therapy was used in 25 cases (32% strabismus , 40% anisometropia and 28% combined).

Conclusion: Though this study has its limitations nonetheless it shows that adding citicoline in addition to patching therapy can significantly influence the visual acuity in amblyopia patients.

Keywords: Amblyopia; Occlusion therapy; Citicholine.

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Introduction

Amblyopia or lazy eye is commonly known as unilateral or bilateral reduction of BCVA without visible organic cause. Patching /occlusion is the gold standard in the management of amblyopia. Other modalities of management has been a subject of intense clinical research.

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Citicoline has been suggested as a adjuvant to patching therapy for a rapid improvement in unilateral amblyopia.

Methodology

The study was conducted at the Department of Ophthalmology, of a tertiary care centre of central India during the study period of 1 year. The inclusion criteria was patients in the age group of 3 to 10 years ,mild to moderate unilateral amblyopia, patients with strict compliance for patching, showing compliance for oral medications. Patients with previous history of ocular surgery, known case of blindness or previous central corneal opacity were excluded from the study.

The study was approved by Institutional ethical committee. Written consent was obtained from parents/ guardians in case of minors. All the cases fulfilling inclusion criteria and presenting to

study area during the study period were enrolled. Patient's name, age, sex, occupation, address, and other socio demographic data was obtained from all the study participants and entered in questionnaire. Detailed history was noted. Further, the patients were subjected to detailed clinical and ocular examination. Ocular examination included best corrected VA, anterior segment examination, slit lamp biomicroscopy, intra ocular pressure, fundus examination. All the cases were also subjected to B scan ultrasonography for ruling out posterior segment pathology.

Patients were divided into 2 groups and study was conducted in 2 phases.

Phase 1

- Patching
- Patching

Phase 2

- Patching +citicholine
- Patching

Statistical Analysis

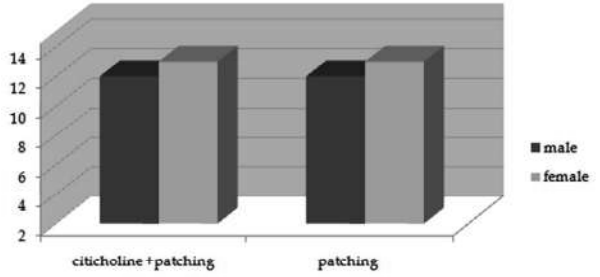
The data was compiled using MsExcel and analysed using IBM SPSS software version 20. Data was expressed as frequency and percentage.

Results

24% patients belonged to the age group of 7-8 years of age. About 52% cases were females. Citicholine with patching therapy was used in 25 cases (36% strabismus cases, 32% anisometropia and 32% combined) and patching therapy was used in another 25 cases (32% strabismus, 40% amblyopia and 28 % combined).

- **Distribution of patients according to gender.**

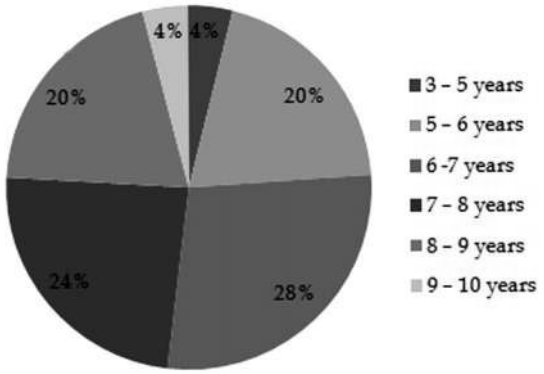
Gender	Citicoline with patching		Patching	
	No of Patients	Percentage	No of Patients	Percentage
Male	12	48%	12	48%
Female	13	52%	13	52%
Total	25	100%	25	100%



- **Distribution of patients according to age group.**

Age Group	Citicoline with patching		Patching	
	No of patients	Percentage		
3 – 5	1	4%	1	4%
5 – 6	5	20%	5	20%
6 - 7	7	28%	9	36%
7 – 8	6	24%	5	20%
8 – 9	5	20%	3	12%
9 – 10	1	4%	2	8%
Total	25	100%	25	100%

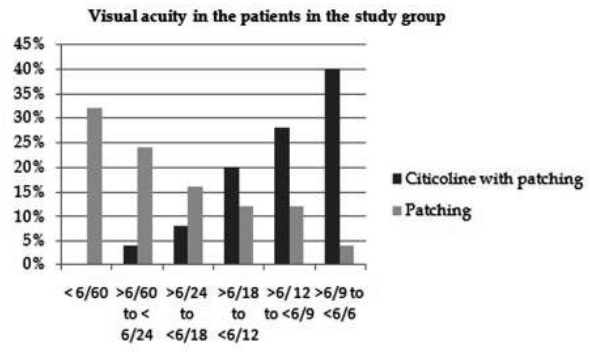
Distribution of patients according to the age group.



- **Visual acuity of the patients in the Study group.**

Visual Acuity	Citicoline with patching		Patching	
	No of patients	Percentage	No of patients	Percentage
< 6/60	0	0%	8	32%
>6/60 to < 6/24	1	4%	6	24%
>6/24 to <6/18	2	8%	4	16%
>6/18 to <6/12	5	20%	3	12%
>6/ 12 to <6/9	7	28%	3	12%
>6/9 to <6/6	10	40%	1	4%
Total	25	100%	25	100%

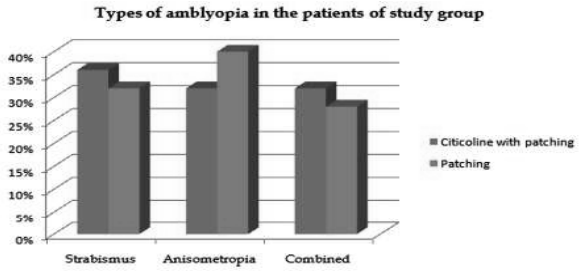
Visual acuity in the patients in the study group.



- **Types of amblyopia in the study group.**

Type of Amblyopia	Citicoline with patching		Patching	
	No of patients	Percen tage	No of patients	Percen tage
Strabismus	9	36%	8	32%
Anisometropia	8	32%	10	40%
Combined	8	32%	7	28%
Total	25	100%	25	100%

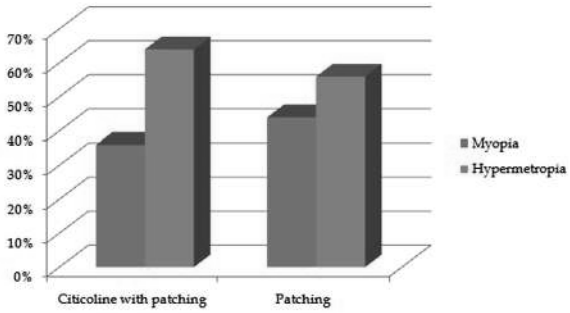
Types of amblyopia in the patients of study group.



- **Types of refractive error in the patients of study group.**

Refractive error	Citicoline with patching		Patching	
	No of patients	Percen tage	No of patients	Percen tage
Myopia	9	36%	11	44%
Hypermetropia	16	64%	14	56%
Total	25	100%	25	100%

Types of refractive error in the patients of study group.



Discussions

Amblyopia or lazy eye is commonly known as unilateral or bilateral reduction of BCVA without visible organic cause. Patching/occlusion is the gold standard in the management of amblyopia. Other modalities of management has been a subject of intense clinical research. Citicholine has been suggested as a adjuvant to patching therapy for a rapid improvement in unilateral amblyopia.

The present study aimed to study the role of citicholine as an adjuvant to patching in unilateral Amblyopia.

Our study included a total of 50 patients of unilateral amblyopia. Majority of patients belonged to 7-8 years of age (45.2%). About 52% cases were females. Citicholine with patching therapy was used in 25 cases (36% strabismus cases, 32% anisometropia and 32% combined) and patching therapy was used in another 25 cases (32% strabismus, 40% amblyopia and 28 % combined).

A similar outcome was observed in the study conducted by Pawar PV et al1, they observed no significant difference in the mean visual acuities in the two groups in phase 1 till plateau was reached. In phase 2, for the initial four months, there was no significant difference in the visual acuities in the two groups, at the respective intervals. however, five months onward, upto 12 months, there was a significant difference in the visual acuities in these groups. the result was the same in younger patients (<seven years of age) as well as in older patients (>seven years of age). In phase 2, the mean proportional improvement in group I was significantly more than that I group II, at two months and onward , at the respective intervals.

A similar outcome was observed in a study conducted by Anurag et al 2. They observed no ignificant difference in the mean visual acuities in the two groups in first 6 months or till plateau was reached. After starting citicoline in one group for the initial two months, there was no significant difference in the visual acuities in these two groups , at the respective intervals, However four months onward, upto 12 months, there was a significant difference in the visual acuities in these groups. The result was the same in younger patients (<eight years of age) as well as older patients (> eight years of age). After starting citicoline the improvement in group I was significantly more than that in group II, at two months and onward, at the respective intervals.

Conclusion

Though this study has its limitations nonetheless it shows that adding citicoline in addition to patching therapy can significantly influence the visual acuity in amblyopia patients.

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