

## Clinical Study on Treating of Light Amblyopia with Acupuncture and Massage

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### ABSTRACT

**Background:** In recent years, children amblyopia is seen on occasion and may result from various congenital and acquired factors. It may present with various symptoms, including paropsis, filminess, fatigue, diplopia, non-corrected visual acuity. Therefore, more and more attention has to be paid to early diagnosis and treatment of light amblyopia, one which is found before 3years old will achieve success by early treatment. **Objective:** To observe the clinical effect of acupuncture and massage for light amblyopia. **Method:** 130patients with light amblyopia were randomly allocated in to a study group [80cases(136eyes)] and control one [50cases(82eyes)]. The study group was treated with acupuncture and massage, while control group was treated with cover method to heath eye or better visual eye of binocular, the method of treatment is determined as twice a day an hour for each time, 2hours once a day, 10hours for each time. **Results:** The clinical efficacy was 92.6%(126eyes)in the study group, being significant as compared with the control one(53.7% 44eyes)( $p<0.01$ ). **Conclusions:** Acupuncture and massage are effective for light amblyopia and worthwhile to apply.

**Keywords:** Acupuncture, massage, amblyopia

### Article Information

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## INTRODUCTION

Light amblyopia can be classified by the cause and may result from congenital or acquired factors due to macula disorder of retina, diseases of visual fibres in occiput area. 4)Treatment of amblyopia at home and abroad till now indicates that there are various methods 6,7,8), we investigated to treat light amblyopia with acupuncture and massage.

## MATERIALS AND METHOD

### 1) Materials

Patients with light amblyopia who visited General Hospital of traditional Koryo Medicine during 2016-2018 were divided in to the study group (80 cases; 136 eyes) and the control one (50 cases; 82 eyes) for study. Patients with scars or inflammation around the eyes were

excepted from study subjects. As for the ages of patients, they were between 3-15years old. As for the gender, men were more than women (46 cases of women(35.4%) and 84 cases of men (64.6%)).

### 2) Method

#### The study group

The stimulating time was 20min in acupoint Jing Ming(BL1), Qiu Hou(EX-HN7), Feng Chi(GB20), Bi Nao(LI14), Guang Ming(GB37),He Gu(L14). Pressing and rubbing(massage) were applied on pts of Jing Ming(BL1), Qiu Hou(EX-HN7), Feng Chi(GB20), Bi Nao(LI14), Guang Ming(GB37), He Gu(L14) for 3-4min every second day.

### The control group

On the basis of reference data 2,3,5), control group was treated with cover method to healthy eye or better visual eye of binocular, the method of treatment is determined as twice for an hour a day, twice for 2 hours a day, once for 10 hours a day.

### Indices of observation

#### - Subjective symptoms

Visual disorder, filminess, diplopia, eyes fatigue.

#### -Objective test

① **Visual acuity test;** Under 200lux was measured visual acuity the by watching standard visual table, observed before and after treatment.

② **Binocular visual function test;** Worth 4 light fusion meter.

③ **Slit lamp test;** Patients with opacity of lens(congenital cataract), one of cornea, one of vitrei corpus were excluded from study subjects.

④ **Electroretinogram (ERG);** In conjunctive capsula of the test eye, 0.5~1% dicain was dropped for anesthetic and it was adapted to light for 5min and then was adapted to dusky. A patient lie down in the bed , and then open upper lid and lower one ,put on upper margin of the cornea a sensor(+), another sensor(-) on ridge of the nose. Then, illumined with indirect light of red lamp to corresponding point for

5min in the eye under 200lux. Electronic change is leaded and amplified on oscillograph and is estimated.

### Criteria for assessment of therapeutic efficacy

The therapeutic efficacy is mainly assessed by changes in subjective symptoms and physical examination indices.

-much improvement: naked eyesight was improved 1.0 as compared with before treatment.

-**Remarkable improvement:** naked eyesight was improved more than 3 stages as compared with before treatment.

-Improvement: naked eyesight was improved more than 2 stages as compared with before treatment.

-**No change:** naked eyesight was improved less than 1 stage or eyesight after treatment was same to before treatment and binocular vision disorder.

### Statistical analysis

Statistical analysis was performed using SPSS version17.0 statistical software. Measurement data were expressed as mean  $\pm$  standard error ( $\bar{X} \pm SE$ ) and analyzed by  $\chi^2$  test and t test. Statistical analyses with the p value less than 0.05 were considered significant.

## RESULTS

### 1) Change in subjective symptoms.

**Table1. Change in subjective symptoms.**

| Groups<br>(Number Of Eyes) | Before And<br>After | Visual<br>Disorder | Filminess | Diplopia  | Fatigue   |
|----------------------------|---------------------|--------------------|-----------|-----------|-----------|
| Study<br>(n=136)           | Before              | 136                | 136       | 81        | 79        |
|                            | After               | 102(75.0)*         | 97(71.3)* | 66(81.5)* | 64(81.0)* |
| Control<br>(n=82)          | Before              | 82                 | 82        | 51        | 48        |
|                            | After               | 40(48.8)           | 37(45.1)  | 32(62.7)  | 26(54.1)  |

( ): %(loss rate) \* :  $p < 0.05$ (compared with control group).

As shown in table 1, there was a significant difference in subjective symptoms(visual disorder, filminess) in the study group as compared with the control one ( $p < 0.05$ ).

## 2) Change in naked eyesight

**Table 2. change in naked eyesight .**

| Groups  | Before<br>After     | No.of<br>eyes | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 | 1.5 |
|---------|---------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Study   | before<br>treatment | 136           | 34  | 35  | 29  | 24  | 14  |     |     |     |     |
|         | after<br>treatment  | 136           | 11  | 9   | 7   | 22  | 23  | 17  | 18  | 12  | 17  |
| Control | before<br>treatment | 82            | 19  | 19  | 15  | 14  | 15  |     |     |     |     |
|         | after<br>treatment  | 82            | 12  | 11  | 13  | 12  | 8   | 9   | 6   | 7   | 4   |

As shown in (Table 2), in the study group was 98 eyes (72.1%)vision acuity of 0.6 lower in the before treatment, after one was decreased 38 eyes (21.3%). The control group was 55eyes(67.1%)vision acuity of 0.6 lower in the before treatment, after one was decreased 26eyes(31.7%).

## 3) Change in mean eyesight

**Table 3. change in mean eyesight ( $\bar{X} \pm SE$ ).**

| Groups  | Vision                | Number<br>Of Eyes | Before Treatment | After Treatment    |
|---------|-----------------------|-------------------|------------------|--------------------|
| Study   | Naked<br>eyesight     | 136               | $0.57 \pm 0.021$ | $0.81 \pm 0.041^*$ |
|         | Mydriatic<br>eyesight | 136               | $0.49 \pm 0.031$ | $0.68 \pm 0.032^*$ |
|         | Corrected<br>eyesight | 136               | $0.63 \pm 0.042$ | $0.81 \pm 0.041^*$ |
| control | Naked<br>eyesight     | 82                | $0.53 \pm 0.028$ | $0.71 \pm 0.037^*$ |
|         | Mydriatic<br>eyesight | 82                | $0.48 \pm 0.029$ | $0.61 \pm 0.017^*$ |
|         | Corrected<br>eyesight | 82                | $0.57 \pm 0.028$ | $0.69 \pm 0.024^*$ |

\*:  $p < 0.05$  (compared with before treatment).

As shown in (table 3), naked, mydriatic and corrected vision was improved a significant difference before and after treatment( $p < 0.05$ ), compared with control group there was not a significant difference( $p > 0.05$ ).

## 4) Change in ERG

**Table 4. change in ERG( $\bar{X} \pm SE$ ),  $\mu V$**

| Before and after | Number of cases | a wave        | b wave           |
|------------------|-----------------|---------------|------------------|
| Before treatment | 30              | $87 \pm 4.52$ | $232 \pm 8.50$   |
| After treatment  | 30              | $98 \pm 5.72$ | $267 \pm 9.72^*$ |

\*:  $p < 0.05$ (compared with before treatment).

As shown in (table 4), electroretinogram(ERG) finding was increased all a significantiy in a wave and b wave.( $p < 0.05$ )

## 5) General therapeutic results

**Table 5. General therapeutic results.**

| Groups  | No. Of Eyes | Normal Eyes | Remarkable Improvement | Improvement | No Change |
|---------|-------------|-------------|------------------------|-------------|-----------|
| Study   | 136         | 32(23.5)    | 53(38.9)               | 41(30.1)    | 10(7.4)   |
|         |             | 126(92.6)*  |                        |             |           |
| control | 82          | 14(17.1)    | 18(22.0)               | 12(14.6)    | 38(46.3)  |
|         |             | 44(53.7)    |                        |             |           |

\*: $p < 0.01$  (compared with control group).

As shown in (table 5), the general therapeutic result indicates therapeutic efficacy is respectively 126 eyes (92.6%) and 44 eyes (53.7%), in the study group and the control one, being a significant difference ( $p < 0.01$ ).

## DISCUSSION

Amblyopia is defined objectively one which was not recognized abnormal change in the eye, and being eyes non-corrected with lens. It may result from various congenital and acquired factors.<sup>9, 10, 11</sup> More and more attention has been paid to early diagnosis and treatment of children amblyopia. Acupuncture and massage were combined with 20min in acupoint (Jing Ming (BL1), Qiu Hou (EX-HN7), Feng Chi (GB20), Bi Nao (LI14), Guang Ming (GB37), He Gu (L14)). Pressing and rubbing (massage) were applied on pts of Jing Ming (BL1), Qiu Hou (EX-HN7), Feng Chi (GB20), Bi Nao (LI14), Guang Ming (GB37), He Gu (L14). for 3-4min Every second day. As a result, subjective and

objective symptoms were improved significantly in the study group as compared with the control one ( $p < 0.05$ ).

## CONCLUSION

Combing acupuncture therapy for 20min in acupoint Jing Ming (BL1), Qiu Hou (EX-HN7), Feng Chi (GB20), Bi Nao (LI14), Guang Ming (GB37), He Gu (L14) and pressing and rubbing (massage) to pts applied to Jing Ming (BL1), Qiu Hou (EX-HN7), Feng Chi (GB20), Bi Nao (LI14), Guang Ming (GB37), He Gu (L14) for 3-4min every second day led to 92.6% of the therapeutic efficacy in the study group, being significant as compared with the control one 53.7% ( $p < 0.01$ ).

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