

Brief report

Can acupuncture therapy help patients with retinitis-pigmentosa?

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Received 26 April 2017; revised 25 June 2017; accepted 27 July 2017

Available online 24 August 2017

Abstract

Purpose: To evaluate the effect of acupuncture therapy on visual function of patients with retinitis-pigmentosa (RP).

Methods: In a prospective study, 23 RP subjects received ten sessions of body-acupuncture. Pre and post-treatment evaluations included best corrected visual acuity (BCVA), uncorrected visual acuity (UCVA), near visual acuity (NVA), and static 30-2 perimetry.

Results: UCVA, BCVA, and NVA improvements after acupuncture therapy were statistically and clinically significant ($P = 0.048$, $P = 0.0005$, $P = 0.002$, respectively). The changes of mean foveal threshold (MFT) and mean deviation (MD) were statistically significant ($P = 0.031$, $P = 0.02$). There were no statistically significant difference between different age group and genders. Subjective symptoms of improvement were seen in most of cases.

Conclusion: Future studies are needed to show the effect of acupuncture therapy on visual function of patients with RP.

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Keywords: Retina; Retinitis pigmentosa; Acupuncture; Chinese medicine

Introduction

Retinitis-pigmentosa (RP) with a prevalence of one in 3000–5000 individuals,^{1–7} is a retinal dystrophy that leads to permanent visual dysfunction. Several treatment modalities have been evaluated, however, no treatment has proved useful.^{4,8}

Acupuncture is a convenient, effective, and simple part of traditional Chinese medicine that has few side effects.⁹ Acupuncture has been used to treat a wide variety of eye diseases.^{10,11} Basic science, clinical research, and RP patients' self-reports support the hypothesis that acupuncture may improve visual function.^{1,8,10,12–15} The goal of this project

was to determine whether it would support the hypothesis that visual function can improve after treatment with a standardized acupuncture protocol.

Methods

This was a prospective, interventional case series study of 23 RP subjects. Each subject received ten sessions of body acupuncture. Pre and post-treatment evaluations included best corrected visual acuity (BCVA), uncorrected visual acuity (UCVA), near visual acuity (NVA) (Bailey–Lovie chart), and Swedish Interactive Threshold Algorithm (SITA) standard static 30-2 perimetry (Humphrey perimeter).

All patients were evaluated by an experienced retina specialist. The symptoms, signs, and electroretinogram (ERG) findings in the patients met the usual definitions of RP. The subjects had no previous history of acupuncture and BCVA better than 1 log-MAR. Subjects discontinued taking any nutritional supplements,

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Peer review under responsibility of the Iranian Society of Ophthalmology.

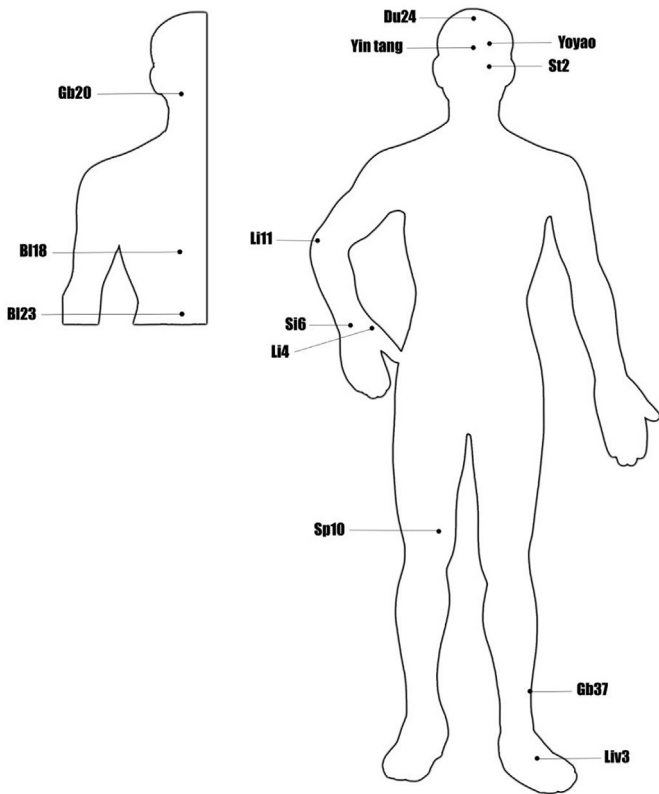


Fig. 1. Acupuncture points for retinitis-pigmentosa (RP).

under the supervision of a specialist ophthalmologist, at least one month before the beginning of acupuncture sessions. An interview was conducted at the beginning of each post-treatment follow-up visit by a simple four-choice (no improvement, a little, moderate improvement, very) questionnaire to determine subjective changes in visual function (night, light, distance and near activities, and central and peripheral vision). Post-intervention evaluations were taken 7–10 days after the last session of acupuncture to eliminate the psychological effects of treatment.

The acupuncture prescription was: Si Bai, Yin-Tang, Feng-Chi, Yu-Yao, Guang-Ming, Yang-Lao, Tai-Chong, Shen-Ting, Qu-Chi, Xue-Hai, Ganshu, Shenshu (Fig. 1). Informed consent was obtained.

Changes were considered significant clinically if any of the following improvements occurred relative to baseline measures: 0.1 logMAR for UCVA, BCVA, or NVA, changes greater than 5 db in foveal threshold (FT) and mean foveal

Table 2
The rate of subjective improvement after acupuncture therapy in retinitis-pigmentosa (RP) patients.

	No improvement	A little improvement	Moderate improvement	Very improvement
Night VA	21.74%	65.22%	13.04%	—
Day VA	8.696%	69.57%	21.74%	—
Distance VA	17.39%	52.17%	26.09%	4.348%
Near VA	30.43%	52.17%	17.39%	—
Central VA	21.74%	60.87%	17.39%	—
Peripheral VA	8.696%	52.17%	34.78%	4.348%

VA: Visual acuity.

threshold (MFT) or 2 db in mean deviation (MD) or pattern standard deviation (PSD) in perimetry.

Statistical testing was carried out by using the SPSS-19. *P*-value ≤ 0.05 was considered statistically significant.

Results

UCVA and BCVA changes were statistically (*P* = 0.048, 0.0005) and clinically significant. The change in NVA was statistically significant (*P* = 0.002) (Table 1). There were no statistically significant difference between different age groups (*P* = 0.434, *P* = 0.808, *P* = 0.175, respectively) and genders (*P* = 0.414, *P* = 0.640, *P* = 0.295, respectively).

MFT and MD were statistically (*P* = 0.031, 0.02) significant but not clinically (Table 1). There were no statistically significant difference between different age groups (*P* = 0.301, *P* = 0.305, respectively) and the genders (*P* = 0.767, *P* = 0.377 respectively) (Table 1). PSD and FT were neither statistically nor clinically changed.

Subjective changes are described in Table 2.

Discussion

In this study we found that the most robust improvements in visual function were for central vision, as we found changes in UCVA, BCVA, NVA, and MFT statistically significant, although the changes of MFT and NVA were not clinically significant. This finding was in agreement with previous studies.^{9–11} Results have been shown that acupuncture therapy has subjective satisfaction with itself, for patients with RP.

Recent studies demonstrated acupuncture can elicit activity in specific brain areas.^{16,17} These specific cerebral activation patterns might explain the therapeutic effects of acupuncture in certain subjects.¹⁶ Regardless of the diagnosis, incurable retinal diseases respond favorably to acupuncture.¹⁰

Table 1
The distribution of mean difference, mean before treatment, mean after treatment, and *P*-value of uncorrected visual acuity (UCVA), best corrected visual acuity (BCVA), near visual acuity (NVA), mean foveal threshold (MFT), and mean deviation (MD) before and after acupuncture therapy.

	Mean before treatment	Mean after treatment	Mean difference	Variance	<i>P</i> -value
UCVA	1.046 ± 0.51	0.980 ± 0.52	0.029 ± 0.072	0.044	0.048
BCVA	0.630 ± 0.44	0.528 ± 0.42	0.069 ± 0.091	0.23	0.0005
NVA	0.535 ± 0.52	0.455 ± 0.48	0.061 ± 0.114	0.02	0.007
MFT	8.90 ± 8.85	9.87 ± 9.07	1.872 ± 8.657	74.95	0.031
MD	−30.31 ± 3.85	−28.44 ± 10.18	1.872 ± 8.657	74.95	0.02

UCVA: Uncorrected visual acuity; BCVA: Best corrected visual acuity; NVA: Near visual acuity; MFT: Mean foveal threshold; MD: Mean deviation.

This study has several limitations including small sample size, the lack of sample group, lack of investigation of RP genotypes, and the durability of treatment effect. The effectiveness of the other body acupuncture prescriptions, auricular acupuncture, mixed acupuncture or electro acupuncture (EA) and also the effect of different needle materials should be further explored in future research.

In conclusion future studies are needed to show the effect of acupuncture therapy on visual function of patients with RP.

Acknowledgement

This research was funded by Shahid Beheshti's University research center (90-1-93-8617). We would like to thank Dr. M. QasemiBrumand and Mr. S. Rahmani, for their assistance with taking the ShahidBeheshti's University research center financial support, and Mr. R. Katanchi, the optometrist of Labafinejad's optometry clinic, for his active participation in collecting volunteers. The support provided by the Labbafinejad and Negah hospital is also gratefully acknowledged.

The protocol for the study was approved by the research center of Shahid Beheshti University of Medical Sciences. The ethical code of this research is sbmu.rec.1392.445.

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