Keynote Speaker

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Bioelectrical Stimulation in An Integrated Treatment for Macular Degeneration, Retinitis Pigmentosa, Glaucoma, CMV-Retinitis, & Diabetic Retinopathy

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Abstract

From December 1995 to September 1997, thirty individuals diagnosed with typically untreatable eye diseases including retinitis pigmentosa, macular degeneration, CMV-retinitis, Stargardt disease and others attended an integrated treatment protocol employing bioelectrical stimulation, nutritional and herbal supplementation (including Ginkgo Biloba, Lutein, DHA) and other health care modalities. The study was monitored by a neuro-opthalmologist, evaluating standard clinical visual function examinations, including objective field of vision tests obtained by the Humphrey FOV analyzer, visual acuity and color discrimination. Four controls were evaluated, with the monitors masked, and although the sample was small, the results were significant in their lack of change.

Follow-up examinations of the graduates were provided, establishing efficacy of the rehabilitative progress made originally, including a review of two graduates who participated in a five-day course of treatment at the six month-post treatment period. Therapy protocol consisted mainly of bioelectrical stimulation with the Electro-Acuscope 80. Overall results showed remarkable increase in visual function in visual acuity in most, and clearly established the safety of the integrated treatment protocol. Long term follow-up indicate maintenance and continued improvement when compliance of home program is continued. Participants of the five day refresher demonstrated a marked increase in visual function, in visual acuity and field of vision.

Keywords

Bioelectrical, CMV-Retinitis, DHA, Electro-Acuscope, Ginkgo Biloba, Lutein, macular degeneration, nutrition, retinitis pigmentosa, Stargardt

Discussion

For the past twenty-five years, both of us have dealt with significant visual impairment, Halloran as a practitioner and patient and Reader as a medical specialist. Most of the diseases that we are dealing with have been designated as chronic, progressive, untreatable and incurable. The majority of these patients are left on their own with no resources available to try to improve their situation. The numbers are staggering and increasing as our population ages. The National Institutes of Health estimates that there are nearly eighteen million Americans suffering from serious visual impairments, with nearly half being diagnosed with macular degeneration.(*1)

Halloran was diagnosed with a genetic eye disorder, retinitis pigmentosa (*2) and Reader as a neuro-opthalmologist, have individually and collectively been searching for methods and therapies that may be of some benefit. We feel that we have been fortunate to rediscover some ancient and natural methods that definitely impact positively on visual function. Also, we have integrated the most technically advanced bioelectrical stimulation devices available to promote cellular healing. We believe that this marriage of western medical technology and eastern traditional healing practices provides the most effective treatment modality for those diagnosed with degenerative and progressive eye disorders.

From December 1995 to September 1997, thirty sight impaired individuals participated in a two-week course of an integrated treatment protocol for visual rehabilitation. The course is based on the Integrated Visual Healing program, developed by Halloran in the 1980's (*3). This report is an extension of a pilot study conducted from 1983-85, documenting 114 participants (*4) with a similar treatment protocol and results as encompassed in this current two year study. The 1983-85 study was monitored by independent optometrists. This study has more objective and medically monitored documentation. Although this study lacks the electrophysiological ERG's, the intent of this two year study was to demonstrate safety and the need for further investigation.

MATERIALS AND METHODS

The 1995-97 group had an age range of 13 to 83, with the following diagnoses: twenty cases of retinitis pigmentosa (RP), seven macular degeneration (AMD – age related macular degeneration) including two cases of Stargardt , a juvenile form of macular degeneration, one diabetic retinopathy, one glaucoma (GL), and one CMV-retinitis (related to the AIDS virus).

Pre- and post-treatment visual testing was monitored by August L. Reader, M.D., F.A.C.S. Visual examinations consisted of field of vision (utilizing the Humphrey Field Analyzer Test, 30-2 Central, a computerized objective test of peripheral vision), standardized testing of best corrected visual acuity (ready and fine recognition sight), Ishihara Color Plate identification, slit lamp examination and intraocular pressure.

A two week intensive therapeutic session provided approximately thirty hours of primary treatments. An average of thirty treatments of bioelectrical stimulation of the Acu-Eye and Acuscope protocol with the Electro-Acuscope 80 were performed using 2.5 Micro Hertz and 25-50 micro amps intensity. These therapies were performed initially by the therapist and later taught to the individual patients for their self-application. The patients were encouraged to use the unit a minimum of three times per day, and up to six times per day. The patients received other supportive therapies including eight sessions of applied kinesiology and neuro-lymphatic deep stimulation (*5), eight treatments of deep tissue acupressure (*6) in the head/neck and shoulder region, twenty sessions of color-shape identification therapy (Tyro Instrument).

Nutritional and herbal support was provided for one group of seven participants (September 1996), all others were instructed to incorporate the supplemental program for on-going long term use (*7). Nutritional regime consisted of a broad based complete multiple vitamin and mineral supplement (Life Pak, IDN, Prove Utah), emphasizing specific nutrients known to impact the visual system which included: DHA (*8), Omega 3 Fatty Acid, Lutein (*9), Ginkgo Biloba (*10), Pycnogenol (*11), and a combination of antioxidants (*12) such as carotenoids (*13).

The integrated rehabilitative program included other disciplines such as stress management (*14), acupressure based on acupuncture (*15) points for improving eye healthy, and other exercises to keep circulation optimum for on-going overall health benefits.

RESULTS

The following tables (Tables 1 – 4) illustrate the improvements noted in this two year study. These tables depict the mean deviation on visual field testing from normal compared from the pre-treatment period to the post-treatment period. Also included are the visual acuities and the color vision testing performed before and after the treatment protocols. The mean improvement in visual field function for all patients was 3.16 decibels. The improvement in the RP patients was only 2.8 decibels, while Macular Degeneration improved 4.61 db. Average visual acuity improvements were 0.98 lines. Color vision improved on average of 1.71 out of 18 color plates per eye in patients with Macular Degeneration, but only 0.35 of 18 plates in the Retinitis Pigmentosa patients (Ishihara Color Plate test for color vision anomalies is not considered the most reliable method of color vision testing.)

Key Code Explanation for the Tables

ID-Code = Diagnosis: First & Last Initials-Age-(Right or Left) Eye
MD=Macular Degeneration **RP**=Retinitis Pigmentosa **GL**=Glaucoma **CMV**=Retinitis
MD-A=Mean Deviation on Humphrey Field of Vision Analyzer Pre-treatment
MD-B=Post treatment Test Normal Mean Deviation Range: -6 to +4
VA-A=Visual Acuity (Distance) Pre-treatment
VA-B=Visual Acuity Post-treatment
CT-A=Ishihara Color Test (Ishihara) Pre-treatment (18 color plates total)
CT-B=Ishihara Color Test at Post-treatment
CF=Count Fingers; **HM**=Hand movement

Table 1- Controls to Participants Comparison

Controls	Pre--	Post-	Participant	Pre--	Post-
JL-RE	-26.66	-27.35	MW-RE	-29.13	-7.86
JL-LE	-26.96	-27.84	MW-LE	-29.44	-15.47
RM-RE	-32.23	-32.58	RO-RE	-32.07	-18.89
RM-LE	-32.53	-32.75	RO-LE	-31.58	-13.07
TC-RE	-31.63	-31.63	IM-RE	-24.04	-23.11
TC-LE	-31.55	-31.11	IM-LE	-25.26	-21.82
MH-RE	-24.25	-22.97*	BF-RE	-28.23	-27.86
MH-LE	-25.64	-20.56	BF-LE	-29.29	-28.85
*Individual took pain medication and muscle relaxant 90 minutes prior to test, VA dramatically decreased on post examination.					

Table 1 depicts the most significant objective evidence demonstrated during the two year period in the field of vision test, by the Humphrey FOV Analyzer (30-2 Central). The measurements outlined reflect the Mean Deviation, an analysis produced by the computerized testing device. Mean deviation is a comparison of the individual testing to a 'normal' population by sex and age. Normal range of mean deviation measurement for healthy population is -6 to

+4. Table 1 demonstrates the difference between a control (masked to the monitor) group of RP to RP participants. The control group was tested
with the participant group on both pre- and post-examination days, receiving the identical testing procedure in a two week period.

Control data for the most part was the same. Participants in the integrated treatment protocol showed significant improvement in post field of vision analysis with the Humphrey FOV device. Recovery of field of vision is not usually associated with Retinitis Pigmentosa or any of the other disorders involved in the study.

Table 2 - Macular Degeneration Results

ID-Code	MD-A	MD-B	VA-A	VA-B	CT-A	CT-B
MD-AH-83-RE	-7.19	-5.19	20/400	20/200+2	12	12
Left	N/A	-1 8.8 9	CF@ 1'	CF@ 1'	0	0
MD-EK-73-RE	-22.64	-20.26	20/60	20/40	0	2.5
Left	-18.51	-16.35	20/40	20/40+1	0	14
MD-SY-58-RE	-1 0.9 9	-8.1 9	20/300+1	20/200	14	15.5
Left	-1 1.84	-4.97	CF@5'	20/100+1	14	15
MD-JA-35'RE	-16.5 7	-15.3 8	CF@3'	CF@1 3'	6	6
Left	-15.08	-1 5.8 5	CF@3'	20/200	6.5	5
MD-RO-35-RE	-32.07	-18.89	20/60	20/50+1	0	2
Left	-31.58	-13.07	20/60	20/50	0	1.5
MD-EL-35-RE	-12.75	-12.87	20/60+1-1	20/60	11	11
Left	-6.27	-3.73	20/50-1	20/50+1	15.5	15

N/A = Not Able to perform test due to poor visual function

Table 3 - Glaucoma & CMV-Retinitis Results

ID-Code	MD-A	MD-B	VA-A	VA-B	CT-A	CT-B
GL-PM-67-RE	-1 8.3	-1 0.8 6	20/40	20/20+1	N/A	11.5
Left	-6.04	-5.46	20/30-1	20/25+1	N/A	12.5
CMV-GW-41-RE	-10.46	-9.07	20/30	20/25-1	18	18
Left	-6.15	-2.29	20/25	20/20+	18	18

N/A = Unable to locate pre-testing data (hard-disk failure)

Table 4 - Retinitis Pigmentosa Results

ID-Code	MD-A	MD-B	VA-A	VA-B	CT-A	CT-B
RP-MW-66-RE	-29.13	-7.86	20/70-2+1	20/70+1	0.5	0.5
Left	-29.44	-15.47	20/100-2	20/100+1	0	0.5
RP-JO-46-RE	N/A	-28.47	20/200-1	20/70+1	1.5	2.5
Left	-30.95	-27.75	20/400	20/200	1	1.5
RP-SD-13-RE	-27.55	-26.5	20/20	20/20+1	18	14
Left	-29.57	-29.99	20/60+2	20/25-1	12	12
RP-IM-16-RE	-24.04	-23.11	20/200+1	20/100	11	11.5
Left	-25.26	-21.82	20/200	20/100	11	13
RP-ES-59-RE	-30.24	2.17	HM@1'	HM@2'	0	0
Left	-19.36	-22.85	HM@0.5'	HM @0.5'	0	0
RP-RS-72-RE	-28.81	-28.92	CF@ 1 Ft.	20/400	0	1.5
Left	-28.3	-28.1	CF@ 1 Ft.	20/200	0	1
RP-GF-50-RE	-26.69	-25.79	20/20+3	20/15	17	17.5
Left	-28.41	-27.1	20/20	20/15-1	17	17.5
RP-TC-50-RE	-31.56	-31.42	CF@1'	CF@2-3'	0	0.5
Left	-31.02	-29.69	CF@1.5'	CF@1-1.5'	0	0
RP-KH-48-RE	-25.19	-25.77	2 0/3 0+1	2 0/3 0-1	17	1 6.5
Left	-24.64	-23.6	2 0/2 5-3	2 0/2 5	17.5	17
RP-BF-72-RE	-2 e+1	-2e+1	20/40+2	?.0/3 0-2+1	14	14
Left	-2e+1	-2e+1	CF@3'	CF®6'	0	0.5
RP-KH-45-RE	-31.67	-31.53	20/200	20/200	0.5	0
Left	-32.06	-31.86	20/200	20/100	0	1.5
RP-HC- 6 0-RE	-24.9	-25.42	20/15	20/15+2	17.5	17
Left	-24.1	-2e+1	20/15	20/15+2	18	17
RP-ME-32-RE	-28.69	-30.19	20/200	20/100+1	8	6
Left	-28.56	-28.99	20/200	20/100-2	8	7
RP-TT-37-RE	-29.41	-28.54	20/30+1	20/25-2	10.5	11
Left	-28.84	-29.61	20/30-1	20/30	11	12.5
RP-BT-32-RE	-31.03	-31.67	20/60+1	20/50+1	2	6
Left	-31.94	-31.88	20/50-1	20/40+1	1	6

N/A = Unable to locate pre-testing data (hard-disk failure)

Conclusion

This two year study clearly shows that bioelectrical stimulation to acupuncture points around the eyes and face have definite positive affects on visual functioning. These techniques, in conjunction with other complementary therapies, have clearly demonstrated that chronic progressive visual loss from several different sources can be reversed to some degree. More importantly, the improvements inactivities of daily living and the quality of life of these patients has been dramatically impacted.

This small study in conjunction with the larger study performed in the mid 80's, emphasizes the need for more research into alternative methods. The information we have thus far obtained only corroborates our previous beliefs that these methods provide patients with some hope for cure.

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