Optimal Health Research

Asyra Determination and Treatment of Chronic Fatigue

S. Osguthorpe, N.D.

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Introduction

Fatigue is a symptom whose causes are protean and whose phenotype includes physical, mood, and behavioral components. Chronic fatigue syndrome (CFS) is an illness that has strong biological underpinnings and no definite etiology. Diagnostic criteria established by the Centers for Disease Control and Prevention have helped classify CFS as an overlap of mood, behavioral, and biological components. Chronic fatigue (CF) in combination with a minimum of 4 of 8 symptoms and the absence of diseases that could explain these symptoms, constitute the case definition for chronic fatigue syndrome. For the purpose of this study the number was expanded to 17 in order to further delineate the root cause. They include the presence of fatigue for more than 6 months associated with a diminution of functional activity and somatic symptoms, and pain not attributable to a specific diagnosis or disease. Four of the following criteria need to be present: sore throat, impaired memory or cognition, non refreshing sleep, post exercise fatigue, tender glands, aching stiff muscles, joint pain, and headaches. Many researchers have observed that CFS shares features in common with other somatic syndromes, including irritable bowel syndrome, fibromyalgia, and temporomandibular joint dysfunction. Correlations between inflammation and infection, augmented sensory processing, abnormalities of neurotransmitters, nerve growth factors, low levels of serotonin and norepinephrine, abnormalities of homeostasis of the stress system, and autonomic dysfunction are the hallmarks of CFS.

ElectroDermal screening devices, EDS, was the creation of Dr. Reinhardt Voll[1][1]**Error! Hyperlink reference not valid.**, who discovered that the electrical resistance of the human body is not homogenous

[1] Voll R. New Electroacupuncture (EAV) measurement points for various eye structures. *Amer. Journal of Acupuncture*. March 1979.

and that meridians exist over the body which have been demonstrated as electrical fields[2][2]. Voll found the body had 1000 points on the skin which followed the 12 lines of the classical Chinese meridians. Working with Fritz Werner, Voll created an instrument to measure the skin resistance at each of the acupuncture points, patterned after Galvanic Skin Resistance (GSR) technique. During the 1950s, many investigators[3][3]**Error! Hyperlink reference not valid.** studied the electrical conductance of the skin. Elasticity, resistance, permeability, and chemistry of the skin were evaluated and found that there was a much lower skin resistance at specific points on the skin. Normally, the skin has a resistance of 2-4 million Ohms but over the specific conductance points, the resistance of only 100,000 Ohms is found in normal healthy persons. These points corresponded to classical acupuncture points.

These acupuncture points were investigated and the assumption was made that the health status of an organ will affect the concentrations of the ions at the measurement points along the meridian. It was considered that inflammation of an organ may cause increased ion concentration and the increase of ions enhances the flow of electrons causing resistance to decrease while the conductance may increase. Conversely, a degeneration of an organ may cause a decease in ion concentration that hinders the flow of electrons, so as the resistance increases conductance decreases.

During the procedure of ElectroDermal screening the body becomes an integral part of a closed circuit. The conductance circuit touches the palm of the left and right hand. For the point of

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[3]Omura Y. Connections found between each meridian and organ representation of corresponding internal organs in each side of the cerebral cortex. *Acupunct. Electro. Ther. Res*.,Vol. 14, No.2, 1989; 155-186.

contact, the ground electrode is held in the palm of the left hand and the test probe is held in the palm of the right hand. After completing this closed circuit, a known amount of electric current is emitted from the instrument through the probe. The instrument then measures the conductance from baseline to peak and return to a baseline through the conductance point that is being tested by the probe. This represents a dynamic conductance value.

Study Design

The study of ElectroDermal (EDS) screening was designed as blinded to the EDS operator in which 150,(75 active, 25 active + Armour Thyroid, 25placebo, 25 control), patients were evaluated by the EDS technique without the aid of a medical history or a physical examination or diagnosis known to the operator before the testing. The same patient was then evaluated by a separate rater, a Physician who did a complete history and physical examination and questionnaire for assessing chronic fatigue. Following the data pooling a statistician evaluated and correlated the results. The construction of the study was to determine how effective the Asyra would diagnose and treat chronic fatigue. All participants had four EDS analyses over a four-month period of time.

Method of Study

Each of the patients was randomly assigned to the study, from a clinic pool of 500 patients, after appropriate approval was granted. A complete medical and surgical history and examination was obtained at the time of the study. Each patient was evaluated, without any interview, by the EDS operator and then by a Physician. A diagnosis was made on the basis of the detailed physical exam and evaluation questionnaire. Control patients without chronic fatigue were also tested by the same EDS operator.

Equipment and Use

ElectroDermal Screening[4] (using the Asyra EDS) consists of obtaining conductance measurements at different (acupressure) locations on the skin, storing these baseline measurements and displaying these readings on a monitor. The normal flow of electrical energy is briefly inhibited by a micro current and the conductance was again measured[5]. While the subject is the ground for a closed system, the instrument functions as a micro-Ohm meter. The technique is non-invasive and has no-risk to the subject. The instrument is calibrated to read the resistance on a scale of 0 (lowest conductance) to 100 (highest conductance). The higher conductance has been associated with inflammation while the lower conductance is associated with degeneration. Each of these acupressure points becomes part of one or more channels or meridians and generally follows the Chinese Meridian lines. Ordinarily, the normal individual will register about 50 plus or minus 5-10 on this scale for each point[6]. In general, it is thought that the point of higher conductance represents an imbalance with higher energy while lower conductance represents an imbalance with lower energy corresponding to pathological changes in an organ that is named as a specific point or meridian[7].

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[4] Comparison of NO contents and cutaneous electric conduction quantity at the acupoints and the non-acupoints.

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Zhen Ci Yan Jiu. 2009 Dec;34(6):383-6, 392. Chinese.

[5] Changes in electrical skin resistance at gallbladder 34 (GB34).

Kramer S, Zaps D, Wiegele B, Irnich D. J Acupunct Meridian Stud. 2008 Dec;1(2):91-6.

[6] Comparison of NO contents and cutaneous electric conduction quantity at the acupoints and the non-acupoints.

Ben H, Li L, Gao XY, He W, Rong PJ Zhen Ci Yan Jiu. 2009 Dec;34(6):383-6, 392

[7] Assessing the potential of electrodermal activity as an alternative access pathway.

Analysis of Data

The patient population ranged in age from 26 to 71 with a mean age of 48.5. There were 91 females in the study as compared to 59 males. The diagnostic categories were:

Candida [8]

Dopamine[9]

Food sensitivities[10]

GABA[11]

Histamine[12]

Melatonin[13]

Blain S, Mihailidis A, Chau T.

Med Eng Phys. 2008 May;30(4):498-505. Epub 2007 Jul 25

[8]Increased number of Candida albicans in the faecal microflora of chronic fatigue syndrome patients during the acute phase of illness.
Evengård B, Gräns H, Wahlund E, Nord CE.
PMID:
17886123

[9]J Affect Disord. 1999 Jan-Mar;52(1-3):275-90.
Chronic fatigue syndrome, neuropharmacological considerations, and new therapeutic vistas.
Brunello N, Akiskal H, Boyer P, Gessa GL, Howland RH, Langer SZ, Mendlewicz J, Paes de Souza M, Placidi GF, Racagni G, Wessely S.

[10]nn Allergy. 1975 Oct;35(4):206-15.
A kinin model of mediation for food and chemical sensitivities: biobehavioral implications.
Bell IR

[11]Clin Chim Acta. 2007 Feb;376(1-2):23-9. Epub 2006 Jul 14.
beta-Alanine and gamma-aminobutyric acid in chronic fatigue syndrome.
Hannestad U, Theodorsson E, Evengård B.

[12]J Allergy Clin Immunol. 2003 Aug;112(2):397-403.
Complement activation in a model of chronic fatigue syndrome.
Sorensen B, Streib JE, Strand M, Make B, Giclas PC, Fleshner M, Jones JF.

[13]Eur J Neurol. 2006 Jan;13(1):55-60.
Influence of melatonin on fatigue severity in patients with chronic fatigue syndrome and late melatonin secretion.
van Heukelom RO, Prins JB, Smits MG, Bleijenberg G.

Norepepinephrine[14]

Serotonin[15]

Thyroid (FT3, T4, TSH)[16]

Iron[17]

Vitamin B12[18]

Vitamin D[19202122]

3.

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[14]PM R. 2010 May;2(5):414-30.
Perspectives on fatigue from the study of chronic fatigue syndrome and related conditions.
Clauw DJ.

[15]Eur J Clin Invest. 2008 Dec;38(12):953-8.
Clinical correlates of blood serotonin levels in patients with mastocytosis.
Kushnir-Sukhov NM, Brittain E, Scott L, Metcalfe DD.

[16]PM R. 2010 May;2(5):456-65.
The genetics and epigenetics of fatigue.
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[17]Neth J Med. 2002 Dec;60(11):429-33.
Primary haemochromatosis: a missed cause of chronic fatigue syndrome?
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[18]Nippon Rinsho. 2007 Jun;65(6):1077-81.
Overview of medical treatment and management of chronic fatigue syndrome.
Yoshihara K, Kubo C.

[19]Med Hypotheses. 2011 Feb;76(2):208-13. Epub 2010 Oct 25.
Will vitamin D supplementation ameliorate diseases characterized by chronic inflammation and fatigue?
Hoeck AD, Pall M

[20]J Clin Sleep Med. 2010 Dec 15;6(6):605-8.
Resolution of hypersomnia following identification and treatment of vitamin d deficiency.
McCarty DE

[21]Int J Vitam Nutr Res. 2009 Jul;79(4):250-4.
Serum 25-hydroxy vitamin D levels in chronic fatigue syndrome: a retrospective survey.
Berkovitz S, Ambler G, Jenkins M, Thurgood S.

[22]Ann N Y Acad Sci. 2000 May;904:625-7.
Bone density and body composition in young women with chronic fatigue syndrome.
Hoskin L, Clifton-Bligh P, Hansen R, Fulcher G, Gates F.

1. Symptomatic

Each of these symptomatic patients was associated with 15 or more of the 17 symptoms

My motivation is lower when I am fatigued

Exercise brings on my fatigue

I am easily fatigued

Fatigue interferes with my physical functioning

Fatigue causes frequent problems for me

My fatigue prevents sustained physical functioning

Fatigue interferes with carrying out certain duties and responsibilities

Fatigue is among my three most disabling symptoms

Fatigue interferes with my work, family or social life

My hands and fee are cold

I have poor memory and concentration

I have had weight gain

I have joint and/or muscle pain

It takes longer than normal to recover after exercising

My resistance to illness is low (I have frequent upper respiratory infections)

I have frequent episodes of diarrhea

2. Asymptomatic

Each of these patients was without symptoms.

3. Tests

All of the participants were tested for the following

Candida

Dopamine

Food sensitivities

GABA

Histamine

Melatonin

Norepepinephrine

Serotonin

Thyroid (FT3, T4, TSH)

Iron

Vitamin B12

Vitamin D

Age-matched control subjects - 25 patients.

Each of the patients/means of the data was statistically analyzed for rise/fall and peak in each testing point. Furthermore, each patient was screened for history of medical illness and clinical features of disease.

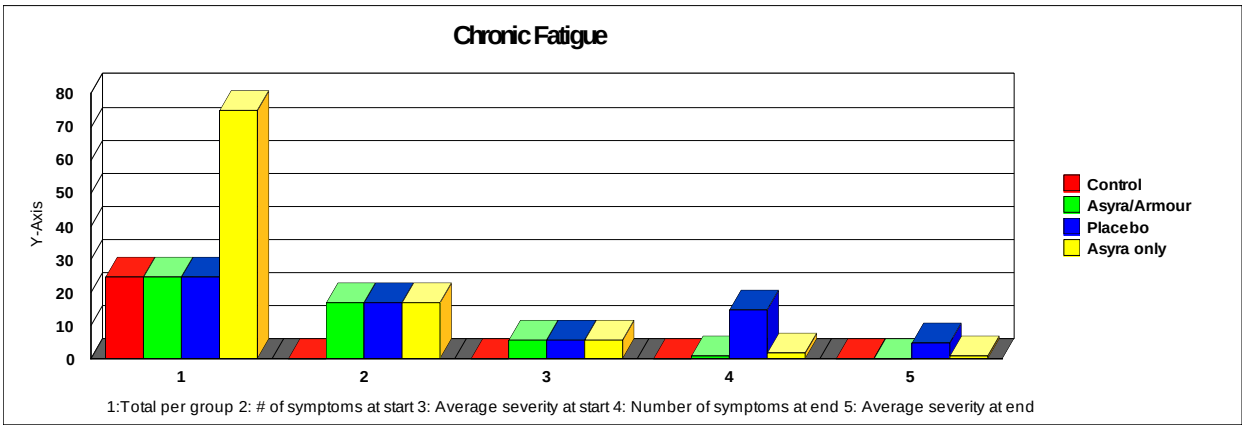
Statistical Analysis

Deviations of more than one standard deviation from the mean for each testing point were calculated and the statistical mean was plotted for each patient and group. Statistical difference of the means was then developed and calculated using the ANOVA[23] method.

[23] The fixed-effects model of analysis of variance applies to situations in which the experimenter applies one or more treatments to the subjects of the experiment to see if the response variable values change. This allows the experimenter to estimate the ranges of response variable values that the treatment would generate in the population as a whole.

Results

The data at the end of the study showed 75 participants with improved symptoms and readings from the Asyra scan, 25 with improved symptoms, Asyra scans and blood draws using the



Asyra and Armour Thyroid, while 25 (placebo) had no change.

Conclusion

The correlation between the EDS measured abnormalities, using standard deviation(SDI) criteria[24] and patients with symptoms were statistically significant at 99.5% with a $P< 0.005$. The resulting data of this study correlates with the findings of previous studies of the effectiveness of the Asyra in quantitative determination and treatment of adverse physiological conditions of the body.

[24] The estimator has a uniformly smaller mean squared error than the sample standard deviation, and is the maximum-likelihood estimate when the population is normally distributed.

Bibliography

1.Voll R. New Electroacupuncture (EAV) measurement points for various eye structures. *Amer. Journal of Acupuncture*. March 1979.

2. Voll R. Acupuncture points for the ear. *Amer. J Acupuncture*. September 1979.

3. Omura Y. Connections found between each meridian and organ representation of corresponding internal organs in each side of the cerebral cortex. *Acupunct. Electro. Ther. Res*.,Vol. 14, No.2, 1989; 155-186.

4. Diagnostic and analytical performance of a screening panel for allergy.

Herzum I, Blümer N, Kersten W, Renz H. PMID: 16176178

5. Increase in prevalence of allergy-like respiratory symptoms in IDDM patients contrasting with a decrease in positive skin prick tests.

Erdenen F, Altungolu E, Boz M, Celik S, Ozbal N, Lehners C, Hentges F.

Ministry of Health Istanbul Training and Research Hospital, Istanbul.

6. Local allergic rhinitis: a new entity, characterization and further studies.

Rondón C, Canto G, Blanca M.; Carlos Haya Hospital, Malaga, Spain. urr Opin Allergy Clin Immunol. 2010 Feb;10(1):1-7

7. Local allergic rhinitis: a new entity, characterization and further studies.

Rondón C, Canto G, Blanca M.; Carlos Haya Hospital, Malaga, Spain. urr Opin Allergy Clin Immunol. 2010 Feb;10(1):1-7

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Kramer S, Zaps D, Wiegele B, Irnich D. J Acupunct Meridian Stud. 2008 Dec;1(2):91-6.

9. Comparison of NO contents and cutaneous electric conduction quantity at the acupoints and the non-acupoints.

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Zhen Ci Yan Jiu. 2009 Dec;34(6):383-6, 392. Chinese.

10. Assessing the potential of electrodermal activity as an alternative access pathway.

Blain S, Mihailidis A, Chau T.

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13. Eur J Neurol. 2006 Jan;13(1):55-60.

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15. Eur J Clin Invest. 2008 Dec;38(12):953-8.

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17. Neth J Med. 2002 Dec;60(11):429-33.

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