

The Correlation of Electrodermal Conductance of Acupuncture Points to Thyroid Function and Hashimoto's Disease

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Abstract

The purpose of this study is to show that, electrodermal measurements of conductance at acupuncture (Voll) points TW2 and Al1b correlate to thyroid function and Hashimoto's disease. 110 patients with thyroid dysfunction were recruited. After appropriate informed consent, a thyroid symptom survey was administered as well as measurements of axillary basal temperatures (BBT) and body mass index (BMI). Conductance measurements were made of points Tw2 and Al3a. Serum measurements of TSH, T3U, T4, T7, Free T3 and Free T4 were made as well as TPO antibodies and Thyroglobulin antibodies in anyone suspected of having Hashimoto's Disease. Brachioradialis reflex was measured using a Thyroflex™ device and resting metabolic rate was calculated using the Kail-Waters equation $RMR = 2307.62 + [-7.53(CM)] + [27.09(KG)] + [-42.59 (BMI)] + [-45.47(PREFIRE)] + [45.85(FIRE)] + [-46.27(FIRE-PREFIRE)]$. Volunteers that were hypothyroid by symptoms and reflexes were treated with desiccated thyroid starting at 1 grain (65 mg) per day with re-evaluations and dosage adjustment every 30 days until reflexes and symptoms normalized. People found to have Hashimoto's had their medication switched from desiccated to synthetic or visa versa.

Results

Comparing unmedicated volunteers to themselves after treatment; parameters changed as expected. Peak values of TW2 and Al3a didn't change much. Indicator drops changed from abnormal (>2) to normal (≤ 2) $p < 0.001$. Symptoms and reflexes were better indicators of thyroid dysfunction and Hashimoto's than TSH values $p = 0.25$. People that were treated for their Hashimoto's (medication switch) showed increasing thyroid function by RMR, reflexes and TSH within 30 days; although, antibody levels would still be elevated. This would indicate that the antibody could not "recognize" the new medication and did not complex with it, allowing more hormone to reach the receptor site.

Introduction

The conductance ($1/\Omega$) of acupuncture points varies and correlates with physiological/pathogenic changes in the body. The fact that change in the electrical field precedes morphologic change, and manipulation of the electrical field can affect the change, may shed light on the diagnosis and treatment of many diseases.¹ In the 1950s, electrodermal screening methodologies were developed by acupuncturists in various countries in an effort to find inexpensive objective measurement of the changes observed in patients receiving acupuncture therapies. Electroacupuncture according to Voll (EAV) is the most versatile, precise, codified, and studied of the methods developed. Dr. Voll and others have gathered clinical data suggesting that electrical conductance measurements taken at low resistance points on the body can be correlated to the bio-energetic functional status of specific organs and tissue systems.⁴ Many of the low resistance measurement points correlate with classical acupuncture points. It has been observed that pathological disturbances of organ function established by conventional medical diagnostic procedures are frequently reflected by disturbed skin conduction values at corresponding points suggested by acupuncture theory.^{5, 6, 7} An abnormal measurement at a point should therefore be suggestive of a functional disturbance associated with its corresponding organ or system.

The electrodermal screening device (EDSD) is an ohmmeter designed to deliver approximately 10-12 μ a (microampere) DC at 1-1.25 v, through a probe or electromagnetic coil. The signal is below the level of human sensation. On the majority of devices the meter is calibrated to read from 0-100 $1/\Omega$ (conductance units), such that the standard skin resistance of 100 m Ω reads 50 $1/\Omega$. The minimum value of zero represents infinite resistance (no electrical conductivity), and the maximum value of 100 μ a, zero resistance at the given voltage and current.⁸

A reading taken with the EDSD is usually described using two values, the initial reading (peak) and the indicator drop (ID). A peak reading of about 50 μ a with ID < 2 is considered to be balanced. When an indicator drop is present, it is considered the most significant part of the reading. The peak reading is primarily an expression of energy, while the ID and its manipulation through medicine testing is primarily an expression of bio-information.

Peak readings are normal from 50- 65 and indicator drops are significant if > 2.

Molecular configurations (electromagnetic spectrum) can be captured as an analog signal, then digitalized and stored in a computer through use of an analog-to-digital converter. That molecular configuration can then be stored and later recalled in its analog form and put out through the EDS probe as a challenge to a specific acupuncture point to generate a response that can be read by the device. When a substance, such as a medicine sample, is put on the aluminum plate in the EDS circuit, the electron waves passing through the plate will be phase-modulated. When the waves later pass through the patient's body, a given signal is transported to the proper organ or tissue by resonant absorption. The signal waves mix with the local electron waves resident in organs or tissues according to the principle of superposition. Both the phase-modulated electron waves emitted by the EDS and the electron-distribution waves existing within the body must have similar and approximately equal phase spectra, excluding their DC component.¹⁰

This is quasi-phase matching between two electron wave groups. It is impossible to find a medicine which has a phase characteristic spectrum identical to the disease, only similar ones. This principle holds true for all types of medicine: botanical, nutritional, chemical, natural, or synthetic. The basis has been established for a challenge mechanism where specific substances can be tested against specific acupuncture points. The challenge will elicit findings to show that the energy of some substances will balance the energy of the acupuncture point (therapeutic), and the energy of other substances will imbalance the energy of the acupuncture point (adverse).

Eisenberg's survey found that 3.4% of Americans have used homeopathy.¹⁴ The scientific literature on homeopathy is still not conclusive, showing positive and negative evidence in meta-analysis of clinical trials.^{16, 17} Reviews of placebo-controlled trials demonstrate that the majority are positive studies,^{18, 19} and to have more effect when compared to placebo and conventional treatments.¹⁵ Benveniste provided potential evidence supporting biological activity of diluted remedies in controversial studies showing inhibition of basophil degranulation with *Apis mellifica*²⁰ and peritoneal macrophage activity with high dilutions of silica.²¹ Later studies showed more conclusive evidence supporting homeopathic remedies using a similar model of basophil degranulation,^{22, 23} lung histamine,²² and histamine.^{24, 25}

Electrical conductance models of "imprinting" remedies on computers have been reported,^{26, 27} and transatlantic transfer of digitized antigen signals by internet link was shown to mimic the activity of the source molecule by Aissa in 1997.²⁸ Non-diluted samples (actual substances) have been shown to be digitally transferred suggesting that electromagnetic molecular signals can be recorded and generate a biological response.^{29, 30}

Benveniste's experiments with guinea pig hearts and water that has been "imprinted" using amplifier and electric currents (histamine and ovalbumin) showed increasing coronary flow.^{31, 32, 33, 34} Voll's approach to assessment and treatment demonstrate its potential use in health care.^{38, 39, 40}

A schematic of a typical EDS configuration is shown in Figure 1.

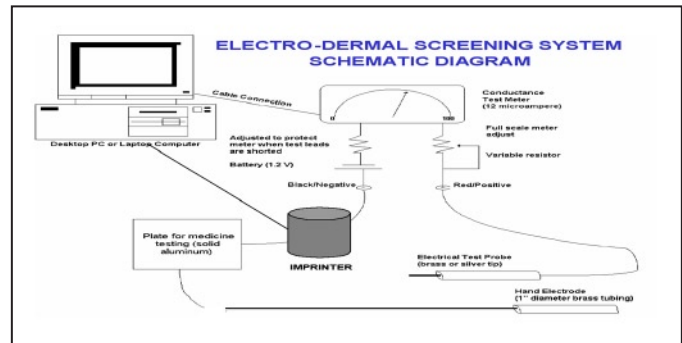


Figure 1

Hypotheses

Conductance measurements of acupoint TW2 correlate with thyroid function.

Conductance measurements of acupoint AL3a correlate with Hashimoto's disease.

Research Objectives

To demonstrate that thyroid dysfunction and presence of Hashimoto's disease can be accurately diagnosed by electrodermal conductance measurement of acupoints TW2 and AL3a.

Materials and Methods

Entry Criteria and Treatment Protocol

Adults on no medication with high (≥ 12) thyroid symptom scores and low ($< 97.5^\circ$ axillary) BBT's.

Subjective Data

The Thyroid Symptom Survey was used to track hypo – and hyperthyroid symptoms. A score of 8-12 on the hypothyroid scale is borderline while scores ≥ 12 are suggestive of hypothyroid status. Any hyperthyroid symptoms are significant.

Objective Data

All conductance measurements were made by a single operator on a single EDMED™ electrodermal screening device. All reflex measurements and calculations of resting metabolic rate were performed on a single Thyroflex™ device. Normal ranges for reflex intervals are Prefire: 70.43-155.87 msec; Fire: 152.96-273.56 msec; Fire-Prefire: 51.61-148.55. The Fire-Prefire correlates best with resting metabolic rate (RMR) and thyroid function. Serum thyroid tests were all performed by Sonora Quest Labs and reflect their norms.

Medications

Naturethroid™, a desiccated thyroid product manufactured by Western Research Laboratories, was used to treat patients that were determined to be hypothyroid by symptoms and reflexes. This agent contains exactly the constituency of hormones as Armour thyroid™ without additives and excipients. People found to have Hashimoto's disease had their thyroid medication switched at equivalent dose from desiccated to synthetic or visa versa.

Results

Comparing unmedicated volunteers to themselves before and after treatment; parameters changed as expected. Peak values of TW2 and AI3a didn't change much. Indicator drops changed from abnormal (>2) to normal (≤ 2). Symptoms and reflexes were better indicators of thyroid dysfunction and Hashimoto's than TSH values. People that were normal by TSH showed a persistent indicator drop on TW2.

People that were treated for their Hashimoto's (medication switch) showed increasing thyroid function by RMR, reflexes and TSH within 30 days; although, antibody levels would still be elevated. This would indicate that the antibody could not "recognize" the new medication and did not complex with it, allowing more hormone to reach the receptor site.

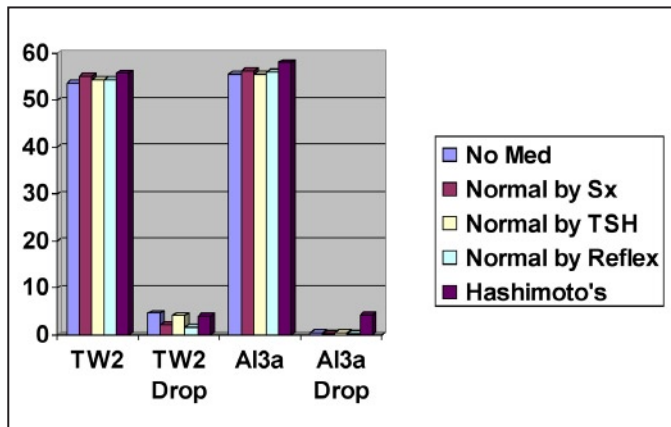


Figure 2

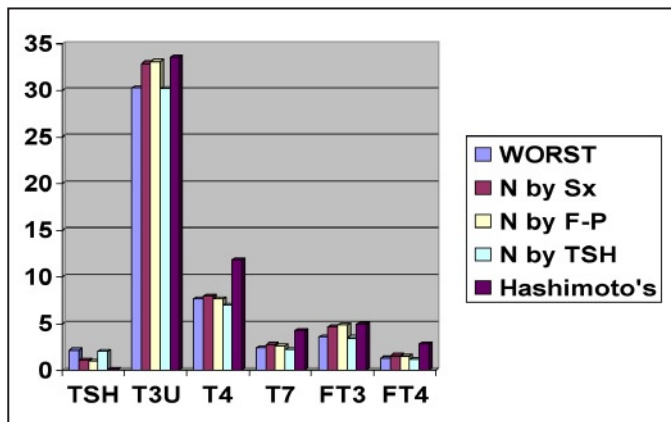


Figure 3

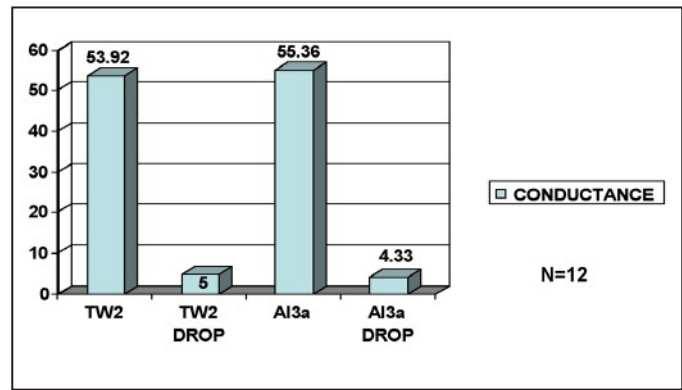


Figure 4: Point conductance and Hashimoto's

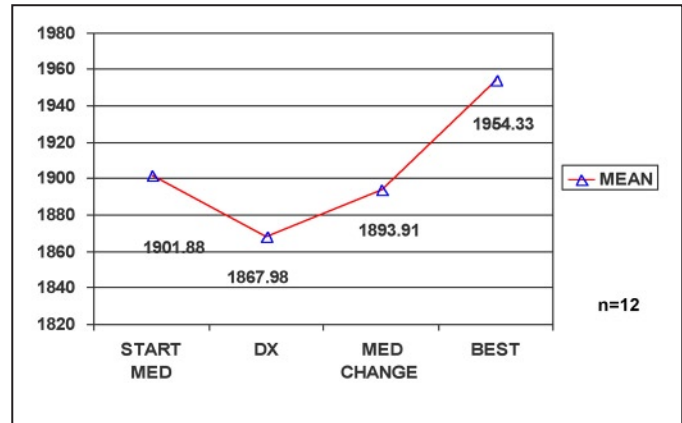


Figure 5: Hashimoto's and RMR

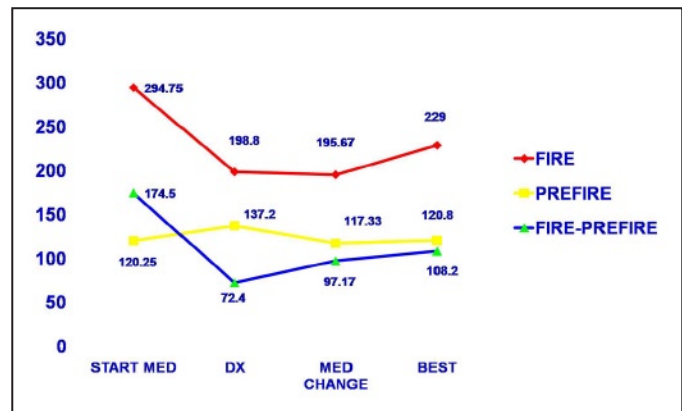


Figure 6: Reflexes and Hashimoto's

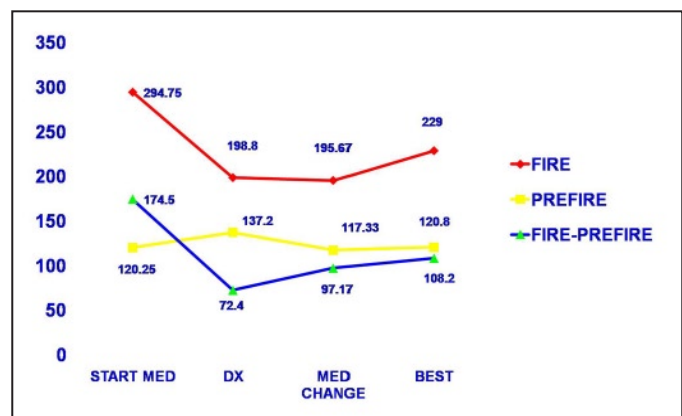


Figure 7: Hashimoto's and TSH

Statistics

Unpaired Student's T-Test was performed on the data. At the 95% confidence level comparing patient data before treatment to after in the same patient showed: that Peak TW2 values $p=0.042$; TW2 indicator drop levels $p<0.0001$; peak AL3a levels $p=0.0002$; AL3a indicator drop levels $p=0.053$; Prefire reflex interval $p=0.009$; Fire reflex interval $p<0.0001$; Fire-Prefire $p<0.0001$; RMR-KW $p=0.31$ TSH $p<0.0001$; and TSH correlated with Fire-Prefire reflex interval. $p<0.001$.

In volunteers with Hashimoto's the Unpaired Student's T Test at the 95% confidence level before and after treatment showed that TSH was not a good indicator of Hashimoto's $p=0.25$, Fire-Prefire reflex interval was significant $p=0.023$; TPO antibody correlated to AL3a peak point conductance measurement $p=0.031$; and TPO antibody to AL3a indicator drop $p=0.007$; TBG antibody correlated to peak AL3a conductance measurement $p=0.54$ and to AL3a indicator drop $p=0.16$.

Conclusions

Conductance measurement of Voll Acupoints AL3a and TW2 are an accurate and reproducible method of diagnosing hypothyroid conditions and Hashimoto's Disease.

Conductance measurement of Voll acupoints TW2 and AL3a correlated very well with thyroid function as assessed by serum or physiological parameters. Energy changes first in a pathological process. This may introduce a confounder in that changes measured by energy may not have advanced far enough to be measured by biochemical means. This did not seem to interfere with correlations of serum to energy.

In Hashimoto's patients AL3a conductance Indicator drop correlated the best with antibodies. We did find that physiological measurements (symptoms, BBT, RMR and reflexes) correlated better than serum tests of thyroid function in Hashimoto's patients. 🌸

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