



Case Report

Case Report on Integrative Cardiology and Acupuncture Treatment for Hypertension and Its Cofactors Such As Daily, Multiple, Long Lasting Vertex and Occipital Migraines/Headaches

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Abstract

This case report describes the usage of integrative cardiology tools including acupuncture to help mitigate cofactors such as migraines and headaches due to hypertension. The patient suffered from idiopathic hypertension since the age of 16 accompanied with daily, long lasting severe occipital and vertex headaches/migraines. The patient incorporated nutritional recommendations as well as started an exercise and meditation program and received total of (13) acupuncture treatments and was also prescribed a Chinese medicinal herbal formula. After completing 13 acupuncture treatments, the patient had no symptoms of the cofactors (occipital and vertex headaches, irritability and short tempered) related to hypertension. Acupuncture could play a role in treating cofactors related to hypertension.

Keywords: Acupuncture; Hypertension; Integrative cardiology; Migraines; Vertex headaches

Introduction

Essential hypertension also called primary or idiopathic hypertension by definition has no identifiable cause and prior to 1940, was virtually not recognized as a disease. 95% of all hypertensive patients fall into the category of essential hypertension [1,2]. According to the Center for Disease Control and Prevention, 70 million of the USA population suffer from hypertension [3-5] and

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various cofactors based on 2006 data - that is approximately 29% of the USA population are 1 in every 3 adults [5].

Hypertension is the most common problem for primary care visits in the USA. Unfortunately, only 50% of hypertensive patients have the disease under control and continue to suffer with various cofactor related issues [5,6]. The American Heart Association estimated the economic toll from hypertension at \$76.7 billion annually to the USA economy [7]. Hypertension increases the risk of heart attacks, stroke and kidney disease [8,9]. It is paramount to have proper disease management tools available in order to prevent subsequent debilitating illnesses resulting from hypertension and its cofactors. According to research, acupuncture could be used as an adjunct in the treatment of hypertension and its cofactors [10].

Presenting Concerns

Patient is a 38 year old female who suffered from hypertension since age 16. She is a mother of 3 children, experienced pre-eclampsia and placental abruption on all three pregnancies - had vaginal deliveries. Patient had been under care of a cardiologist since her teenage years and was placed originally on atenolol for several years but medication was abruptly stopped (reason unknown to patient) by the cardiologist which caused her to have a hypertensive crisis in early 2015. At that time, patient was put on methyldopa which caused her to have an allergic reaction. This resulted in an ER visit; patient was stabilized and placed back on atenolol 50 mg daily and nifedipine 30 mg daily. Blood pressure remains at 140/100 mm Hg with the exception of daily short term blood pressure spikes. At the same time, patient has been experiencing daily, long lasting intense vertex and occipital headaches (on a scale 0 - 10; 6-7/10). Headaches were not managed or controlled via medication.

Clinical Findings

Patient has significant family history for hypertension. Her biological father and multiple paternal uncles all developed hypertension at a young age. Patient is of Asian decent; 5 feet tall and weighs 122 pounds. Patient's diet consists of oatmeal for breakfast, salads and lean protein for lunch and dinner; she does not add salt to food and she consumes a moderate amount of carbohydrates. She had suffered from chronic constipation for several years and also experiences abdominal bloating. Patient sleeps approximately 5-6 hours per night and is usually interrupted by her young children. Patient does not follow an exercise routine, but is actively involved in the care of her three young children. Patient also complains of constant neck pain for which she receives chiropractic adjustment on a regular basis.

Patient self-referred herself for evaluation of her hypertension and subsequent headaches from an integrative cardiology perspective.

Physical exam showed no abnormalities.

Vital signs: BP 146/108 mm Hg, Temperature 98.8 degree Fahrenheit or 37.1 degree Celcius; BMI 23.83 kg/m²; constitutionally well developed and well nourished; normocephalic; negative for thyromegaly.

| Initial On-Set of symptoms | Initial Visit to Integrative Cardiologist | Subsequent Visits to MD | Cardiology Results |
|----------------------------|--|--|--|
| 22 years ago | May 20th 2015 to Integrative cardiologist | June 30th 2015; Dec 17th 2015, March 29th 2016. | June 2nd 2015 - Cardio Metabolic Rate test negative; June 19th 2015 Comprehensive Stool Analysis test: No yeast isolated, Lysozyme elevated showing inflammation; Secretory Ig A elevated suggesting up-regulated immune response; June 19th 2015 Heavy metal test results showed non-significant results; all follow-up cardiology evaluations were stable. |
| | Initial Visit to TCM practitioner (Traditional Chinese Practitioner, including acupuncture and Chinese herbology) | Subsequent visits to TCM practitioner | TCM Results |
| | | Acupuncture treatment only | |
| | May 25th 2015 | June 1st 2015, June 5th 2015, June 11th 2015, June 18th 2015 | Weekly follow-up visits showed a substantial decrease in the frequency, duration & intensity of the headaches; from a scale of 0-10, the intensity decreased from a 6-7/10 down to a 2-3/10; and patient had no headaches on average of 3 consecutive days following the acupuncture treatment. |
| | | June 30th 2015; July 10th 2015 | Patient experienced no headaches at all, scale 0/10 |
| | | July 24th 2015 | Two weeks without headaches scale 0/10 |
| | | July 31st 2015 | One week without headache scale 0/10 |
| | | August 21st 15 | Three week follow-up visit, no headache scale 0/10 |
| | | Acupuncture treatment and Chinese herbal formula (was authorized by integrative cardiologist). | |
| | | Sep 4th 2015 | No headaches on a scale 0/10; patient received Liu Wei Di Huang Wan prescription 1 gram/day |
| | | Oct 1st 2015 | Phone consultation with patient and patient reported no headaches only occasional tension and no issues with formula; I advised patient to take formula every other day, 1 gram. |
| | | Jan 15th 2016 | Phone consultation with patient and patient reported no headaches only occasional tension and no issues with formula; I advised patient to take formula twice a week, 1 gram |
| | | Feb 11th 2016 | Phone consultation with patient and patient reported no headaches only occasional tension and no issues with formula; I advised patient to take formula twice a day, 1 gram |

Table 1: Timetable A.

Cardiovascular: Patient experiences normal heart rate, regular rhythm, normal heart sounds and intact distal pulses, no heart murmurs heard.

Neurological: Patient is alert and oriented to person, place and time. No cranial nerve deficit, negative for seizures, syncope and facial asymmetry.

Psychiatric: Patient has normal mood and affect; behavior is normal and optimistic outlook on life, very animated but not hyperactive.

Integrative cardiology evaluation resulted in the following recommendation for outpatient treatment:

- Follow up with her regular cardiologist for her usual medical management and micronutrient testing - currently atenolol 50 mg daily oral, nifedipine 30 mg daily oral, Omega fish oil (3S/DHA/EPA/FISH) 1 tablet, CyanocobalaminVit B12 oral 1 tablet daily, Cholecaliferol Vit D3 1000 unit chewable daily.
- 3 day doctor's data stool test to evaluate for dysbiosis
- Urine testing for heavy metal toxicity
- Heart-Math biofeedback sessions

- 30 min of aerobic exercise daily
- Acupuncture
- Pranayama Universal Breathing - APP for iPhone
- Supplements: CoQ10 100 mg daily, Magnesium Citrate 400 mg at bedtime, garlic supplement, Metagenics Cardiogenics Intensive Care
- Foods add to daily regiment: Celery - 4 stalks, garlic - 4 raw cloves, onions - 4 raw slices, wakame, natto and dark chocolate (at least 70 %) 10-30 gm.

Diagnostic Focus and Assessment

For the acupuncture treatments, the patient was asked at the very beginning of each session to answer the following questions verbally on a scale from 0 - 10 whereby 0 is no pain and 10 is the highest pain level.

- Did patient experience any headaches if so?
- What was the frequency of the headaches?
- What was the intensity of the headaches?
- What was the duration of the headaches?

Initially MYMOP (Measure Yourself Medical Outcome Profile) for patient’s assessment was considered but due to time limitations, the above mentioned verbal shortened evaluation was used [11]. Patient’s level of “happiness” and “improved temperament” was not part of the initial treatment goal but was referenced several times as a positive by the patient herself. Also a decrease of neck, back and low back pain was mentioned by patient numerous times but was not part of the initial treatment goal. The treatment goal was to decrease/diminish headaches and migraines.

Please refer to “Timetable A” (Table 1) to see the progression of the migraines/headaches symptoms indicated on a scale 0 - 10. This Timetable A also illustrates the various cardiology appointments and their recommended tests.

The figure 1, “Timeline for Cardiology and Acupuncture Services” shows a visual representation of patient interventions on a consecutive time line such as cardiology and acupuncture visits, acupuncture and herbal phone consultations and the development of the patient’s blood pressure.

Please refer to the table for “Blood Pressure Development” (Table 2) to see swiftly how the blood pressure improved from the first cardiology visit back in May 2015 to the last follow-up in June 2016.

Therapeutic Focus and Assessment

Patient followed the recommendations of the integrative cardiologist; was medication compliant (atenolol 50 mg & nifedipine 30 mg daily), included nutritional recommendations (celery, garlic, onions, wakame, natto and dark chocolates), as well as taking vitamins (D3, B12, Fish oil, CoQ10, Magnesium citrate, Garlic and Metagenics Cardiogenics Intensive Care). Patient also started 30 minutes of daily aerobic exercise and started working out with a trainer two times a week one hour each. Patient also incorporated Heart-Math biofeedback and Pranayama breathing technique.

Acupuncture treatment

Due to the nature of the chief complaint of daily, long lasting and intense headaches, the patient received acupuncture every 4th or 5th day for a total of 5 acupuncture treatments each lasting 30 minutes. After the 5th treatment, patient reported absence of headaches. The following three acupuncture treatments were given once a week. Patient reported again no headaches within treatment intervals of one week. Two acupuncture treatments followed every other week - again no headaches. Another acupuncture treatment was scheduled after a three week interval. Patient experienced only one minor headache. At this time, patient also was prescribed an ancient Chinese herbal formula, Liu Wei Di HuangWan, 1 gram daily for two weeks; patient had a follow-up herbal consultation after being on the formula for two weeks; since patient experienced no headaches, the herbal prescription was decreased to every other day 1 gram only. Another follow-up was scheduled 4 months later - at this time, patient reported experiencing only occasional tension but no headache - at this time the herbal prescription was decreased to only 2 times per week 1 gram each time.

Patient also reported an improvement in her mood aside from being headache free.

Patient also indicated that her lower and middle back and neck are pain free and the back feels looser all together.

Acupuncture had an immediate impact on the headaches as opposed to the dietary changes and nutritional supplements. During

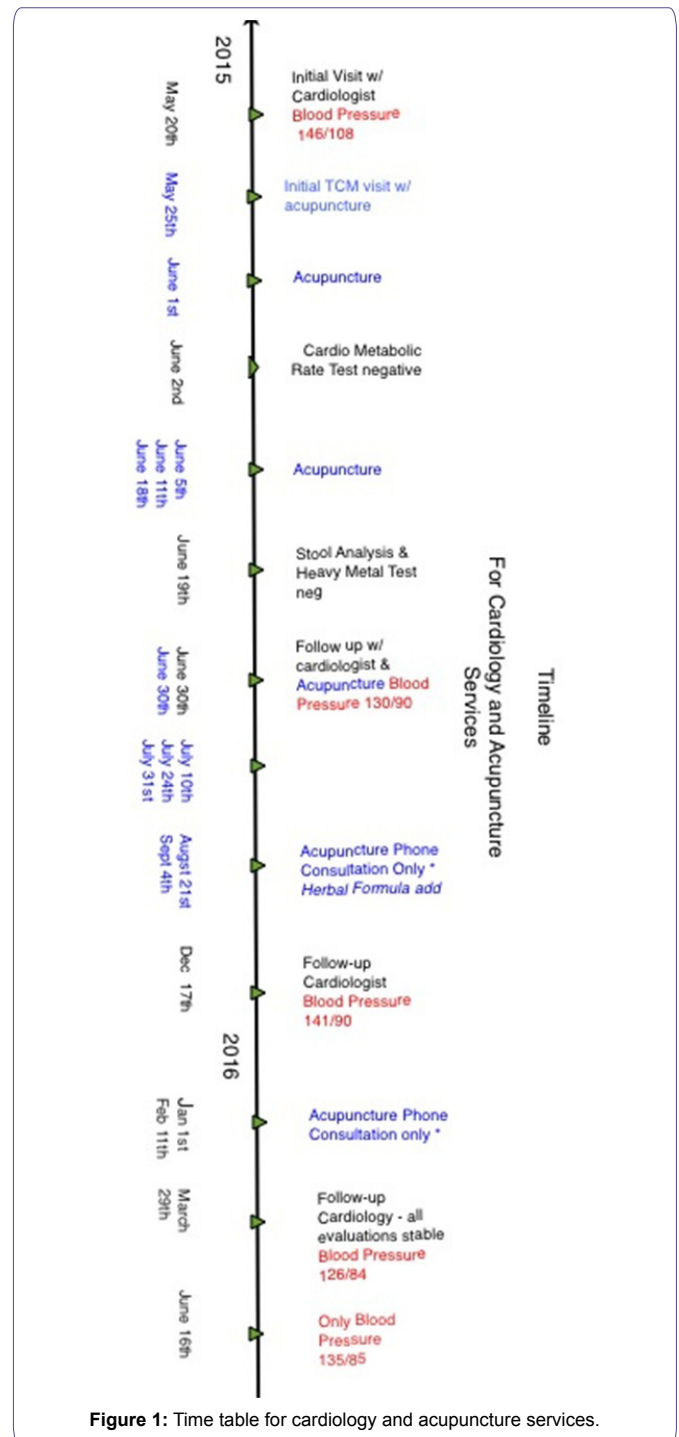


Figure 1: Time table for cardiology and acupuncture services.

| Date | Blood Pressure Readings |
|-----------------------|-------------------------|
| Initial Visit 5/20/15 | 146/108 mmHg |
| 6/30/2015 | 130/90 mmHg |
| 12/17/2015 | 141/90 mmHg |
| 3/29/2016 | 126/84 mmHg |
| 6/16/2016 | 134/85 mmHg |

Table 2: Blood Pressure Development.

Please note, no other blood pressure readings were taken.

the first couple of treatments, patient experienced a headache prior to the acupuncture session. The headaches disappeared during the acupuncture session and patient remained headache free for a couple of hours initially and then days following the acupuncture treatment [12].

Acupuncture treatment was performed in prone position. The traditional Chinese diagnosis was “Kidney yin deficiency with underlying Spleen Qi Deficiency”.

The diagnosis was formulated due to patients’ symptoms such as a slightly V-shaped yet swollen tongue, malar flush in the afternoon and early evening hours, sweating of the palms, vaginal dryness, dry eyes, being bloated after eating, propensity towards flatulence, fatigued, headaches with a sensation of “flutter around the chest” and constipation with loose bowls.

The tongue, as mentioned above is slightly V-shaped, pink/reddish in color, swollen, scalloped on both sides, thick white coating and sublingual veins are negative.

Pulse presented as thin, weak and slightly floating; the chi position is not rooted and hardly felt. Both, the cun and guan positions are present. The overall pulse rate is 82 beats/minute.

Patient was diagnosed by the practitioner, Jutta Gassner.

The following acupuncture points were used: Small Intestine 3, Urinary Bladder 62, 13, 15, 17, 23, Kidney 2 & 7, Gall bladder 20 & 21. Even so patient presented with an underlying Spleen Qi Deficiency, no specific acupuncture points were selected to treat Spleen Qi Deficiency since Kidney Yin Deficiency presented itself so prominently. By nourishing Kidney Yin Deficiency, the patients “traditional” Spleen Qi Deficiency symptoms such as fatigue, constipation with loose bowls and propensity towards flatulence improved.

Needle retention was approximately 30 minutes without stimulation.

De Qi sensation was achieved by most points. De Qi was measured in two ways - one via subjective needle sensation experienced and felt by the practitioner (practitioner felt a slight “pull” by the needle) and

the other one via patient feedback; where patient would state “Oh I feel an electric shock”.

Needle size used (0.12) X 30, brand, “Seirin”.

Follow up and Outcomes (Table 2)

Initially patient was seen every 4th or 5th day for 5 follow up acupuncture visits. Since patient experienced no headaches, the acupuncture was stretched out to once a week for two sessions. Patient remained headache free which resulted in two follow up visits two weeks apart, followed with two acupuncture sessions three weeks apart since patient experienced no headaches. Since patient incorporated all recommended self-help tools as indicated by the integrative cardiologist, time was very much limited. Also patient was gearing up to work anywhere from 4 to 6 months 12 to 14 hours per day since company was preparing for a strike and patient had to work extra hours. This additional work burden, would prohibit the patient from exercising, relaxing, enjoying family time, meditating and getting an acupuncture “tune-up” etc. Due to this time constriction, the Chinese herbal formula, *Liu Wei Di Huang Wan*, was prescribed to patient. The herbal formula would help strengthen the patient’s weakness and by doing this hopefully alleviate the return of her migraines. Patients follow up after taking the herbal formula was initially two weeks, than four months and then one month. Patient has not experienced any adverse effects to the herbal prescription and remained headache free. The outcomes are illustrated below.

The Chinese herbal formula, *Liu Wei Di Huang Wan*, was prepared by Crane Herb Company, located in Mashpee, MA via pill form.

The ingredients for *Liu Wei Di Huang Wan* are as followed: Shu Di Huang 9 grams, Shan Zhu 9 grams, Shan Yao 9 grams, Mu Dan Pi 4.5 grams, Fu Ling 6 grams, Ze Xie 3.5 grams, Du Zhong 6 grams.

Initially, the herbal formula was prescribed for 1 gram/day for 2 weeks; then 1 gram every other day for 4 months and finally 1 gram 2 times per week only as maintenance dose as long as the patient was covering for the strike and working these extra long hours.

| Acupuncture treatment only | |
|---|--|
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Table 2: Acupuncture treatment follow up.

Discussion

The findings of this case report support that acupuncture is an effective modality to help treat vertex and occipital headaches due to hypertension in conjunction with an integrative cardiology approach. The patient was very compliant, incorporated and followed through all of the suggested medical treatments. Proper management and care of hypertension and cofactors such as headaches is essential in those individuals especially since it affects quality of life.

Some research studies show positive effects of acupuncture treatments of hypertensive cofactors such as headaches and or migraines and adding acupuncture to standard care to this patient population, can result in a better quality of life. (Cevik C1, Iseri So 2013). Furthermore, a recent meta-analysis on the effects of acupuncture on blood pressure reduction only without looking at cofactors, showed mixed results. 23 RCT, sampling over 1788 patients showed on two trials a decrease in systolic blood pressure when acupuncture was administered in conjunction with pharmaceuticals. The remaining 21 trials were unclear of bias and the evidence alone for acupuncture lowering blood pressure is insufficient. Nonetheless, acupuncture needs to be further investigated as an adjunct treatment modality for co-factors related to hypertension.

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