

Acupuncture driven depression treatment: a noninvasive approach with acupuncture and oriental medication

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Abstract

In this article and memorandum, authors are presenting a short review of acupuncture as a Traditional Chinese Medicine (TCM) as driving factor and as a Complementary and Alternative Medical (CAM) therapy as a noninvasive treatment of depression by influencing *QI* as vital energy that circulates through the body all time. This therapy or treatment in general, is involves inserting thin needles into the skin of patient at very specific points on the body to stimulate the central nervous system. Practitioners of acupuncture technique are firmly believing that a *QI* deficiency is linked to spleen and that rest and eating certain foods can treat the imbalance. According to TCM, *QI* energy is an invisible energy that is a vital energy, which determines a person's health and it flows through a network of 12 major energy meridians or pathways. The authors in this short review are investigating how acupuncture can influence this invisible energy in support of balancing neutrons and perceptrons waves within brain by synchronizing them, which enhance and improves reduction of depression within a patient as a noninvasive approach.

Keywords: Acupuncture, Depression and Noninvasive Approach Treatment, Suicide Attempt and Suicide Rate, Youngsters, Suicide Risk Management, Transcranial Magnetic Stimulation, repetitive Transcranial Magnetic Stimulation, Electro-Convulsive Therapy (ECT), Traditional Chinese Medicine.

Introduction

These days the most devastating disease that is even worse than the new pandemic COVID19 is commonly spreading and exists in particular is human depression and world-wide is something that has no permanent cure either. Spread of this disease is specifically, among the youngsters [1-2].

Researchers and scientist in the field of medicine and psychology are looking for some noninvasive approach to treat this disease. Present chemical medication available in the market that are subscribed to patients are not effective as just one set of solution cross all the patient and in case of Deep Depression (DD) and Major Depressive Disorder (MDD) an invasive solution such as clinical Electro-Convulsive Therapy (ECT) in most cases should not be prescribed due to tremendous and devastating side effective of it on patients that are going through such treatment as a long-term as a means of solution to their depression problem.

New studies and clinical results are supporting a new generation of magnetically treatment approach that is known as Transcranial

Magnetic Stimulation (TMS) or in case of a longer-term period, suggests repetitive Transcranial Magnetic Stimulation (rTMS), both as very non-invasive approach with almost no adverse side-effects on patients that are receiving such clinical treatments [3]. In the published paper of reference by Zohuri [3], he does review these two recently approved approaches by Food and Drug Administration (FDA). A newly suggested electric energy medicine by utilizing a new form of wave that is known as a Scalar Wave, which is a non-linear, non-Hertzian, standing wave capable of supporting significant effects including carrying information and inducing higher levels of cellular energy, which greatly enhances the performance and effectiveness of the body and immune system [4-6].

“Basic and clinical studies demonstrate that depression is associated with reduced size of brain regions that regulate mood and cognition, including the prefrontal cortex and the hippocampus, and decreased neuronal synapses in these areas. Antidepressants can block or reverse these neuronal deficits, although typical antidepressants have limited efficacy and delayed response times of weeks to months. A notable recent discovery

shows that ketamine, a N-methyl-D-aspartate receptor antagonist, produces rapid (within hours) antidepressant responses in patients who are resistant to typical antidepressants. Basic studies show that ketamine rapidly induces synaptogenesis and reverses the synaptic deficits caused by chronic stress. These findings highlight the central importance of homeostatic control of mood circuit connections and form the basis of a synaptogenic hypothesis of depression and treatment response” [2,7].

However, in last two decades specially, extensive research has been devoted in this subject, yet the neurobiology of Major Depressive Disorder (MDD) remains poorly understood due to lack of biomarkers, relatively low rates of heritability, and heterogeneity of precipitating factors, including stress [7-10].

Looking for alternative as well a Complementary and Alternative Medical (CAM) therapy in form of a noninvasive treatment of depression, western medicine looking into about 3,000 years medicine of Chines known as Acupuncture as a Traditional Chinese Medicine, where practitioners of such techniques are using it for various medical conditions, including treatment of depression by balancing QI energy through out body of a person (i.e., Figure 1) with Mild Depression (MD) or even in some cases related to a Major Depressive Disorder (MDD) as an alternative and noninvasive approach.



Figure1: Chi (QI) Energy Network in Human Body.

In the following section, authors of this article, take the liberty of introducing this ancient Chinese medicine namely “Acupuncture” and what to know about its driven effect for treatment of this devastating diseases as “Depression”.

What is Acupuncture?

As Figure 2 illustrates, “in acupuncture, thin steel needles, which are the width of a human hair, are inserted into specific parts of your body. Where the needles are inserted depends on the health issue being treated. Some health issues treated using acupuncture include:

- Arthritis
- Menstrual cramps

- Chronic pain
- Acute pain such as muscle pain, back pain, knee pain
- Migraines and headaches
- Sports injuries
- Allergies.



Figure 2: Acupuncture Procedure Illustration. (Source: Adam Gault/Getty Images)

In Traditional Chinese Medicine (TCM), it is believed that the body has a flow of energy or Chi (QI) that regulates your health. If the flow is disrupted, you will feel ill. Applying needles to specific acupuncture points, called meridians, rebalances your energy flow and improves your health” [11].

In theory, acupuncture, which originated in China, helps energy flow through the body to create better balance and health.

What is the theory behind acupuncture and how this theory works can be described very holistically as we stated in above. Acupuncture is what’s known as a Complementary and Alternative Medical (CAM) therapy that involves inserting thin needles into the skin at specific points on the body to stimulate the central nervous system as illustrated in Figure 2 and here as presented in Figure 3 as well.

According to experts at John Hopkins Medicine, acupuncture triggers the release of chemicals into the muscles, spinal cord, and brain that activate the body’s natural healing processes, which in turn promote general physical and emotional well-being.



Figure 3: Acupuncture Theory Process.

“Treatment with acupuncture is a strange experience. Before lying down on the treatment couch, patients are likely to be asked to roll up their sleeves and take off their socks or stockings even though

they are not complaining of anything wrong with their hands and feet. The acupuncturist will probably poke and prod them in various parts of the body, and perhaps measure along the skin with his or her fingers, looking for a particular point to insert some special needles. The insertion itself is likely not to hurt at all, and certainly not like the sharp prick that you might expect which is just as well, because the acupuncturist will go on inserting more needles, possibly as many as six or eight. The needles go either just into the skin or deeper into the muscle” [12].

“Each needle is about 1 inch long (Plate 1), and is inserted up to about half way and then twiddled for 30 seconds or so. This produces an odd kind of ache, which is strange because the needles are solid nothing is being injected and nothing is drawn out. Then the needles just rest there, or maybe they are attached to a battery-powered stimulator (Plate 2), which makes them gently tingle. The needles are left for about 10 to 20 minutes, before being simply taken out again. The patient then goes home, often feeling strangely relaxed for a few hours, even a bit sleepy. Then he or she may notice that the symptoms feel a bit better though, just as likely, not after only one treatment. This strange performance is repeated once a week for a course of six or eight treatments, and in most cases the symptoms gradually disappear” [12].

What is the Meaning of Chi (QI) Energy: Theory and Origins

According to traditional Chinese medicine, Qi pronounced chee-refers to the “vital energy” or “life force” that flows through every person as depicted in Figure 1, every organism, and everything in the universe. There is no life without Qi. The concepts and origin of Qi energy dates back more than 5000 years and falls back on roots from Eastern medicine and philosophy and is one of the core principles of TCM and Chines Martial Arts (Figure 4).



Figure 4: Vital Qi Energy.

Just as blood and lymph move through your body, traditional Eastern medicine believes Qi flows through you in the same way.

Along with Yin and Yang, Qi energy makes up from the fundamental roots of Chinese medicine.

A strong flow of Qi through the meridians results in good health, well-being, focus, motivation, and energy. When Qi becomes weak or stagnant and energy meridians blocked, low vitality, pain, and illness can occur.

Note: Chinese meridians and acupoints are fundamental pillars

of Traditional Chinese Medicine (TCM) and Eastern energy medicine. In acupuncture, acupoints are stimulated to promote the flow of vital energy or Qi.

The theory of Chi energy (or Qi energy) is a vital component of Traditional Chinese Medicine (TCM). Chi is the connective energy that runs throughout the entire body. It is often referred to as the life energy or life force within the body. It is not composed of a particular form of matter, but rather resembles the breath and blood that flow through our bodies. It moves freely through pathways and nourishes the systems of the body and mind. Because it is related to everything, understanding Chi and maintaining a healthy Chi (Qi) is an important part of TCM.

A strong Chi makes a human being totally alive, alert and present while weak chi causes sluggishness and fatigue. Chi energy is vital. It nourishes health and gives an individual the strength and willpower to carry out daily activities. When we are young, we are full of this vital energy, but as we age, we develop blockages and it becomes more difficult to keep the chi energies flowing without obstructions. When a person’s chi energy is blocked or depleted, there is a chemical imbalance in the body’s system and illness occurs.

Now that we have a better understanding of Vital Energy Qi, the question is that, “What are the Chinese energy meridians and acupoints, and where are they located?”

In TCM, the Chinese energy meridians are a vast network of invisible pathways or channels that allow Qi energy to flow freely through your body (Figure 5).



Figure 5: Qigong Energy Healing Steps.

Energy meridians have a few functions:

- They transport Qi energy around the body
- They govern the function and health of organs and body systems
- They have unique emotional and physical properties
- They contain energy points called acupoints also known as acupuncture points or acupressure points

The body meridians have been extensively mapped in TCM, but there are 12 major Chinese energy meridians that correspond with specific organ systems. They run along either side of the body as illustrated in Figure-6, mirroring each other.

As Figure 6 illustrates, there are two systems of channels or meridians, the primary and the secondary meridians. Reiki mostly focuses on the 12 primary meridians because they affect the internal organs for health and healing, whereas the secondary does not.

The 12 pairs of primary meridians are listed below:

1. Lungs
2. Colon
3. Stomach
4. Spleen
5. Heart
6. Intestines
7. Urinary bladder
8. Kidneys
9. Pericardium
10. Gall bladder
11. Liver
12. Triple burner



Figure 6: 12 Pairs of Primary Meridians.

The triple burner meridian is thought to represent our metabolism and could be associated with heart, lungs and the pancreas, which produces insulin. Some TCM practitioners think it might be associated with the sex organs.

Finally, there is yin, feminine energy, and yang, masculine energy. Reiki and other meridian work make sure these are in balance so the body doesn't under function or over function. However, further study of this particular area is beyond the scope of this memorandum.

Types of Qi energy is listed here and it is acceptable and understood by TCM that there are three sources of Qi in the body:

Yuan Qi: This is inherited from your parents and remains with you from conception.

Hou tain Qi: This is the qi you get throughout your life from the food you eat, the air you breathe, the water you drink, and the exercise you do. It's absorbed by your body and distributed via your energy meridians.

Wei Qi: Also known as defensive Qi, this serves the purpose of protection from pathogens and illnesses. It's akin to a protective

shield around your system. Interestingly, this also comes from the outside – your diet, the air you breathe, and your environment.

Each organ also has its own vital Qi such as spleen-Qi, heart-Qi, kidney-Qi, etc.

Acupuncture Depression Treatments

Now that we have some basic concept of acupuncture and understanding of it how it works, question arises that “*Is Acupuncture Any Help for Depression?*”

Although some folks are in opinion of the fact, while the acupuncture is not a replacement for standard depression treatments such as Electro-Convulsive Therapy (ECT), some studies suggest that acupuncture can help people with the mood disorder feel better, where ECT can be consider as very invasive way of treating depression, the acupuncture is not.

As we stated, acupuncture that is known as Complementary Alternative Medical (CAM) therapy, which is totally a noninvasive approach to deal with mood disorder as a sign of depression and enhance that feeling to a better and more positive direction by way flowing the Qi energy wave in an organized and laminar stream through out the body of patients under depression feeling.

As we saw in Figure-3 and stated that acupuncture triggers the release of chemicals into the muscles, spinal cord, and that activate the body's natural healing processes and in return promote general physical and emotional in a well-being direction, so one feel good.

In next few sections, we define depression, very annoying diseases of century, in a holistic way and what exactly is and what does cause it by interrupting the way our neurons and perceptron communicate with each and a synchronized series of waves and signaling each other in a healthy person without any sign of depression under normal conditions.

By a common based on data collected among folks that have gone through acupuncture treatment, is a good procedure that drives pain relief and it is a common use for acupuncture, per the Mayo Clinic.

However, researchers are also studying whether it can help treat other health conditions such as depression, which affects 21 million adults in the United States, states the National Institute of Mental Health.

Further on in this short review, we will explain what is the Electro-Convulsive Therapy (ECT) procedure and how “ECT Possibly Relieves Depression” at a very server stage among some patients that are tangling with this symptom, although in a long run not only is not a permanent approach, it also has some serious side effects including loss of memory of past history among the folks that have undergone through this treatment multiple time and it is considered a very invasive as well.

Brain Waves

In a written report by R. Douglas Fields on November 29, 2018 in Scientific American under title of “Do Brain Waves Conduct Neural activity like a Symphony?” [13], he talks about how the neurons and perceptron within brain communicate with each other via sending signals to each other by way of an electrical-wave of some sort [14].

“In the textbook explanation for how information is encoded in the brain, neurons fire a rapid burst of electrical signals in response to inputs from the senses or other stimulation. The brain responds to a light turning on in a dark room with the short bursts of nerve impulses, called spikes. Each close grouping of spikes can be compared to a digital bit, the binary off-or-on code used by computers” (Figure 7).

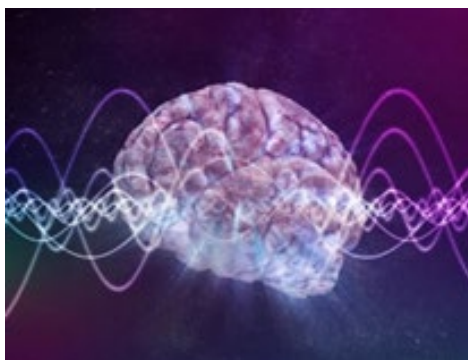


Figure 7: Artistic Brain Wave Behavior Depiction.

“Neuroscientists have long known, though, about other forms of electrical activity present in the brain. In particular, rhythmic voltage fluctuations in and around neurons oscillations that occur at the same 60-cycle-per-second frequency as AC current in the U.S. have caught the field’s attention. These gamma waves encode information by changing a signal’s amplitude, frequency or phase (relative position of one wave to another) and the rhythmic voltage surges influence the timing of spikes”. Reference [13] argues that brain cells are communicating with each other through some means wave such as wave of a tuned music synchronized in a good harmony played by well-experienced musician in an orchestra. Thus, if one player cannot be in harmony with rest of player, the harmony you hear is totally of synchronization and does not cross pleasantly to the ear of audiences.

This unsynchronized is analogous to the brain waves among its cells, when wave of communication between these cells are totally out of tune and would be cause of mood disorder and eventually Major Depressive Disorder (MDD), which is the root of depression. As part of depression treatment, physicians, psychiatrist and psychologists need to bring the brain waves under control of harmonizing it either by chemical medicine, talk therapy or medical treatment such as ECT as well as newly suggested a non-invasive approach such as TMS or rTMS [16].

What is Depression and Cause of it

Depression, or major depressive disorder, is an illness that involves a constant feeling of sadness and a loss of interest or pleasure. There may also be several other symptoms:

- Difficulty sleeping or sleeping too much
- Tiredness and lack of energy
- Thoughts of death or suicide
- Changes to appetite and weight
- Irritability and frustration, even over small matters
- Trouble concentrating, making decisions, remembering things
- Feelings of guilt or worthlessness.

As we stated, depression is often treated with medication, talk therapy, or both. However, between 19% to 34% of those with depression don’t improve with medication or therapy. Many people (15% to 50%) will also have depression again despite ongoing treatment.

How ECT Relieves Depression

In a study using genetically engineered mice, Johns Hopkins researchers have uncovered some new molecular details that appear to explain how Electroconvulsive Therapy (ECT) rapidly relieves severe depression in mammals, presumably including people. The molecular changes allow more communication between neurons in a specific part of the brain also known to respond to antidepressant drugs (Figure 8).



Figure 8: Conceptual ECT Procedure.

In a report of their study, published online on Oct. 20, 2018 in Neuropsychopharmacology, the researchers say the findings should help advance the development of treatments that do what ECT does without the risks and side effects [13], although that is a questionable concern among researchers and scientist that are pushing for treatment such Transcranial Magnetic Stimulation (TMS) and repetitive TMS (rTMS) [14].

Reference [13] indicates that new brain cells develop in the brain’s hippocampus after electroconvulsive therapy in a healthy mouse (top) and a mouse lacking the protein Narp (bottom). The new cells from the Narp-less mice have fewer branching dendrites, needed for communication with nearby brain cells, than the healthy mice do.

“ECT is the most effective treatment available for severe and treatment-resistant depression, but it requires anesthesia and can cause side effects like memory loss,” says Irving Michael Reti, M.B.B.S., M.D., director of the Brain Stimulation Program and associate professor of psychiatry and behavioral sciences at the Johns Hopkins University School of Medicine. “Figuring out how exactly ECT works on the brain is key to finding better alternatives” [15].

The new study extends work by Reti and his colleagues, whose research has focused recently on a gene in the mouse brain’s hippocampus that makes the protein *Narp*, shown to be linked to addiction and so-called “motivated behaviors” more than a decade ago, while Reti was working with Jay Baraban at Johns Hopkins [15].

ECT, given to depressed patients under anesthesia and after taking a muscle relaxer, sends electrical pulses to the brain through electrodes applied to the head as illustrated conceptually in Figure 8. The electrical stimulation triggers a seizure. Repeated a few times a week for a short period, ECT eliminates depressive symptoms for an extended time in many patients. For more details, reader this article should refer to reference [16] or internet.

Overall, for some people with severe or hard-to-treat depression, ECT is the best treatment. This treatment, sometimes referred to as “electroshock therapy,” is often misunderstood and incorrectly portrayed by popular media as a harsh, cruel treatment. In reality, it is a painless medical procedure performed under general anesthesia that is considered one of the most effective treatments for severe depression. It can be lifesaving. However, having dialog with patients that have gone through this treatment do not see it as ultimate way of threatening their depression and after going through so many sessions of ECT treatment still suffering from their exiting depression.

ECT works quickly, which is why it’s often the treatment of choice for people with highly severe, psychotic, or suicidal depression. For these people, waiting for antidepressants or therapy to work might be dangerous. However, the drawback is that the effects of ECT usually don’t last, and further treatments will likely be necessary.

ECT is never used on someone who does not want it.

Depression Treatment Driven by Acupuncture Approach

Some people with depression are now giving alternative treatments, such as acupuncture, a try. In the United Kingdom, psychological distress, which includes depression, was the second most common reason why people tried acupuncture.

There have been few research studies about acupuncture for depression, so it’s difficult to accurately measure its treatment benefits. Something that limits research into acupuncture as a treatment method is that it is hard to create a control condition.

Practitioners and patients know if they are doing or having the treatment.

As we also stated previously, in traditional Chinese medicine, it is believed that the body has a flow of energy or *qi* that regulates your health. If the flow is disrupted, you will feel ill.

Applying needles to specific acupuncture points, called meridians, rebalances your energy flow and improves your health, if you can tolerate pain of poking needles into your body never system that acupuncturist applies in certain point of your body.

Acupressure practitioners use their fingers, palms, elbows or feet, or special devices to apply pressure to acupoints on the body’s meridians. Sometimes, acupressure also involves stretching or acupressure massage, as well as other methods.

A study published last fall in the *Journal of Alternative and Complementary Medicine* found that electroacupuncture in which a mild electric current is transmitted through the needles was just as effective as fluoxetine (the generic name of Prozac) in reducing symptoms of depression. For six weeks, patients underwent either electroacupuncture five times weekly or a standard daily dose of fluoxetine. The researchers, the majority of whom specialize in traditional Chinese medicine, assessed participants’ symptoms every two weeks and tracked their levels of Glial cell line–Derived Neurotrophic Factor (GDNF), a neuroprotective protein. Previous studies have found lower amounts of GDNF among patients with major depressive disorder, and in other research levels of the protein rose after treatment with antidepressant medication [17].

Many people with depression consider complementary therapies like acupuncture, per research published in March 2018 in the Cochrane Database of Systematic Reviews. One reason, according to an analysis published in October 2021 in *Frontiers in Psychology*, is that acupuncture is associated with fewer side effects than antidepressant medications.

A central goal of acupuncture is to restore balance in the body by increasing the flow of *qi*, or vital energy, and fatigue and lack of energy are common symptoms of depression, explains Jasdeep Sandhu, MD, a psychiatrist at LifeStance Health in Atlanta. In addition, acupuncture is widely used to relieve pain, which by itself can cause depression or be caused by depression, Mayo Clinic experts note [18].

Korean SaAm Acupuncture Technique

As we stated in above, the history of acupuncture actually dates back thousands of years, where physicians and healers noticed its vast benefits and low risks. Throughout its history, acupuncture has continued to evolve to be even safer and more reliable and incorporated to treat more illnesses, disorders and ailments. One of the best ways to trace the origins of acupuncture is by taking a look at the Korean SaAm acupuncture technique.

Sa-am acupuncture is a unique Korean traditional acupuncture method developed by Sa-am in the seventeenth century A.D. and most widely adopted by Korean medical doctors in the clinic (Figure 9) [19].

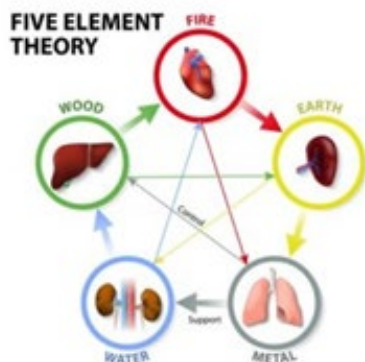


Figure 9: SaAm Acupuncture Targets Certain Organ System.

Sa-am acupuncture uses five-transporting points according to the principle of tonification and sedation. The combination of KI10•LR8•LU8•LR4, called Liver-tonification, has been reported as the most commonly used acupoint combination in Sa-am acupuncture [20], and is used to treat a variety of pain and psychological conditions, such as depression [21].

Note that: In traditional Chinese medicine, tonification is a form of therapy that aims to balance qi. It can be done in many ways, including massage, acupuncture, herbal medicine, and dietary changes. Other methods include leading a healthy sexual life and practicing breathing exercises (Figure 10).

Acupuncture is also used for tonification. The therapy uses thin needles, which are inserted into certain points on your body's meridians.

The needles are said to trigger energy flow, which helps balance Qi.



Figure 10: Tonifying by Acupuncture.

Acupuncture might also be done in the form of acupressure. In this treatment, the provider uses their hands or thumbs to place pressure on meridian points. This is also thought to rebalance the flow of Qi.

Conclusion

As an alternative in particular about patients with depression that have gone through treatment such as ECT or for a long period of time have been under depression medicine and no longer their brains and disorder feeling does not respond to effect of these medicine, should consider acupuncture as an alternative for treatment of their depression in way of preventive maintenance in order to bring their depression under control for longer period of time. By going through continues sessions of acupuncturing process, when properly applied and done, it can lower your stress levels and leave you calmer, sleeping better, in a better mood and even living longer.

Who would not want that? Feel good, be strong and live long. So, with acupuncture you not only can solve some of your health problems, but you strengthen your body and mind so that you are more resilient and resistant to the problems life throws at you.

At the end, Stress can lead to poor health, more pain, worse allergies and other immune problems, and mood problems. It can even shorten your life.

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