

Japanese Acupuncture - Current Research

Japanese Traditional Medicine Text (1) – Internal Medicine

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A Circulatory Organs

1. The present condition of Clinical Research in Foreign Countries

In this section, on the topic of circulatory organs, we will be reporting on the current situation and prospects for domestic Japanese clinical research on Acupuncture and Moxibustion research, especially with respect to Hypertension. Hypertension is known globally as one of several lifestyle related diseases, notably in Japan alone has at least 40 million hypertensive patients. Arteriosclerosis, which occurs as people age, contributes to the increased frequency of Hypertension in the elderly population. Currently, hypertension and its related complications accounts for 30% of medical costs for people over age 65. Because of the inevitably high percentage of elderly patients with hypertension, I often intend to use clinical acupuncture and moxibustion for these patients. Widely known as the silent killer, hypertension has relatively mild or manageable subjective symptoms but if these are left untreated, the patient may suffer a stroke, ischemia or renal insufficiency, life threatening complications caused by this risk factor. For this reason, the purpose of treatment for hypertension is not simply to lower high blood pressure, but also to maintain normal levels to prevent ischemia or stroke. Classification of hypertension include Essential Hypertension and Secondary Hypertension, lifestyle habits such as high intake of sodium or alcohol, stress, smoking etc., as well as genetics, constitute factors that clearly contribute to the disease process. As for treatment, there is the non-medical aspect of therapy that includes improving daily habits such as reducing sodium intake and weight loss, moderate exercise, prohibition of smoking, and limiting alcohol

consumption combined with medical interventions, including hypotensive agents such as pharmaceuticals controlling sympathetic nerve blockers (a β acceptor blocker, an alpha-adrenoreceptor blocker), which act on the renin-angiotensin system. Reducing renin secretion helps to reduce the heart-oxygen demand by reducing extracellular fluid volume. The side effects and complications associated with this type of pharmacological treatment protocol, not to mention the costs, means many patients cannot adapt to these medical treatments 2). For many of these patients, the low cost and elimination of side effects makes the alternative therapies of Acupuncture and Moxibustion rather appealing 3). Until now there has been a lack of scientific proof for the effectiveness of acupuncture treatment for hypertension because there have not been enough well designed randomized controlled studies (RTC) or case studies and long term case reviews 4,5).

However, recently, Europe, America and Korea have been performing large scale RCTs demonstrating the efficacy of acupuncture treatments for hypertension 6-8). In 2007, Germany conducted an RCT study on 160 low to middle range hypertension patients and report that acupuncture treatments effectively lowers high blood pressure. As a result, when compared to the sham acupuncture group, the acupuncture group experienced significantly reduced systolic and diastolic blood pressure during the 24 hour period immediately following the treatment. This reduction lasted 6 weeks, but, follow-up results, 3 months and 6 months post treatment, showed the acupuncture group's blood pressure had returned to pre-treatment levels 6). (Figure 1).

Further, Korean researchers performed double-blind RCTs on 41 patients with High Blood pressure levels above 120/80mmHg. Previously, America approved new guidelines for hypertension, defining systolic blood pressure to be 120-139mmHg and diastolic blood pressure to be 80-89mmHg. The Korean study showed that 8 weeks of regular acupuncture

treatments significantly contributed to decreases in blood pressure when compared to the results of the sham acupuncture group 7). The group concluded that regular acupuncture is beneficial as a remedy for hypertension. In contrast, an American RCT study of 192 hypertension patients was conducted 8). This study divided the subjects into three random groups: standard acupuncture, sham acupuncture and no treatment. All patients received a Chinese Medical diagnosis where an individualized set of acupoints was determined. Treatments were conducted regularly for 6-8 weeks. Compared to basal readings, all three groups showed reductions in diastolic and systolic blood pressure 10 weeks following the trials, however the difference between groups was not significant. Further, 12 months following the trials, blood pressure levels showed a trend of returning to pre-trial levels, so both the conclusion that acupuncture treatment is effective for hypertension and not long lasting for hypertension were reported. In recent years, Lee et al. 9), conducted a systematic review of interventions using acupuncture therapy to treat Hypertension. They selected 11 RCT reports that satisfied all the standard criteria and showed references not only to the slight efficacy of acupuncture treatments to reduce hypertension when compared to the control intervention, but also to equivalent effectiveness when compared to hypertensive medications. Unfortunately, because of small sample size, some qualities of the trial designs and some disagreement between results the researchers could not reach the conclusion that acupuncture is sufficiently effective to treat hypertensive patients. Additionally, concerning moxibustion treatment as well, Kim et al., conducted a systematic review of 4 RCTs that met standard criteria. Of the 4 reports, 2 used hypertensive medications as the only control group and did not find a significant difference between to the control and moxibustion treatment for reducing hypertension. The other 2 reports compared

moxibustion treatment to two controls, hypertensive medications and no treatment, and found a significant decrease in patient hypertension levels when comparing moxibustion treatment with no treatment. However, because of the low number of high quality RCTs, differing results between reports; and with respect to moxibustion treatment RCTs, the difficulty of establishing an appropriate control intervention, there is insufficient evidence to suggest that moxibustion is effective for hypertension.

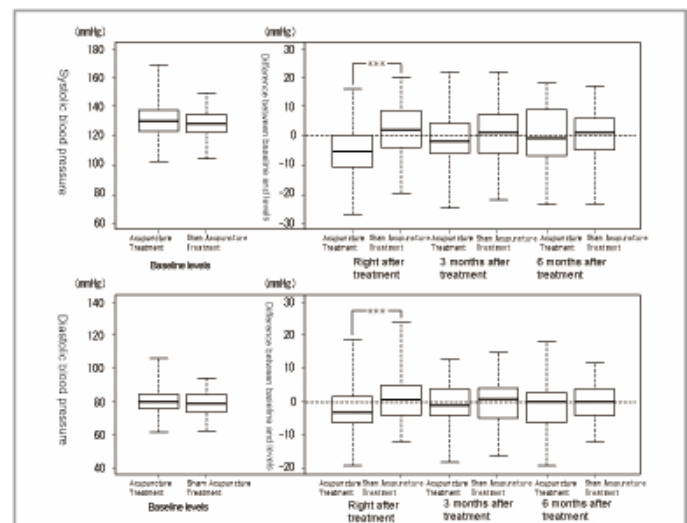


Figure 1 Effects of Acupuncture Treatment on Changes in Blood Pressure over a 24 Hour Period

Comparing significant drops in blood pressure levels between acupuncture and sham acupuncture subject levels immediately following the treatment: Systolic Blood Pressure (Upper Level), Diastolic Blood Pressure (Lower Level)(*** $p < 0.0001$). Significant differences between the two groups were not compared 3 months or 6 months following the trials.

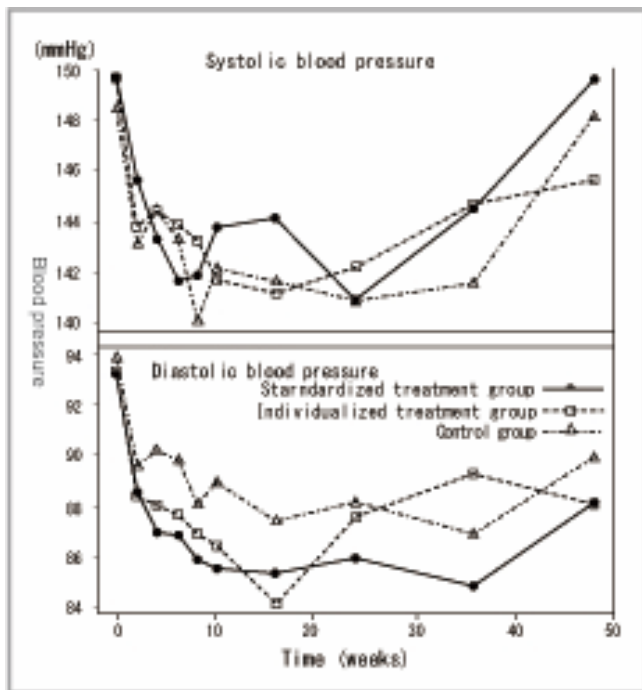


Figure 2 Changes in Systolic and Diastolic Blood Pressure due to Acupuncture treatment

Ten weeks following the trials, trends in decreased systolic and diastolic blood pressure were confirmed, however, significant differences were not confirmed between the three test groups: the individualized treatment group, the standardized treatment group and the control group. By 12 months following the trials, blood pressure levels had returned to pre-trial levels in all subject groups.

2. The current situation and outlook of Japanese Clinical Research

On the one hand, in Japan, most research is collected in clinical case compilations, and fewer documents, including RCTs and systematic reviews can be retrieved. Kou et al., 11) conducted a 2 month intervention on 15 elderly women (6 with normal blood pressure and 9 with hypertension). The purpose of these trials was to perform whole body acupuncture treatments. The subjects were asked to perform 24 hour ambulatory blood pressure monitoring (ABPM). According to cosine similarity, analyzing blood pressure levels during the day may

not elicit significant changes, however, using a cross comparison between day and night time standard values, known as a hyperbaric index, the researchers reported a significant decrease in blood pressure for the hypertensive group. Further, with respect to acupuncture treatment efficacy for hypertension, until now blood pressure readings were taken at random times before and after the treatments, but because acupuncture efficacy was not apparent using this method, it is now being suggested that 24 hours ABPM blood pressure recordings provide the potential for detailed analysis of blood pressure readings that were undetectable using only occasional readings.

Concerning the mechanism by which acupuncture can lead to decreases in blood pressure, basic research on intrinsic opioids within the brains of anesthetized rats activates of the inhibitory system of the sympathetic nervous system, suggesting the involvement of serotonin, nociceptin, GABA etc. Further, using an animal as a model with renal hypertension, this group treated St 36 (足三里) with electro-acupuncture causing acceleration of carbon dioxide production, blood vessel dilation and a reported decrease in blood pressure 13)

In the future, the themes of clinical research utilizing acupuncture and moxibustion for the treatment of Hypertension will necessarily need to focus not only on effectively lowering blood pressure, but also relieving the numerous complaints and symptoms that accompany hypertension. Further, as has been pointed out, hypotensive medications have side effects, interactions with other drugs and limits to their applicability so we consider combining pharmaceuticals with acupuncture and moxibustion in an effort to create a synergistic effect, reducing the amount of medicines required for effectiveness to be an important area of investigation.

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