

Case Report

Rapid Hypertension Management with Acupuncture: Immediate Outcomes of Needling at Liver 3, Liver 2, Ear Shenmen, and Du 20. A Case Study.

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ABSTRACT

Hypertension (HTN) is a widespread global health issue and causes a major risk factor for cardiovascular diseases. It is often referred to as a “silent killer” because it is asymptomatic in its early stages. Obesity, dyslipidemia, age, smoking, and a sedentary lifestyle are all risk factors for hypertension, and the diagnosis of hypertension is based on office Blood Pressure measurement. While antihypertensive medications and lifestyle changes are recommended for managing high blood pressure, other therapies such as acupuncture are gaining attention, particularly in yoga and naturopathy settings. This case report presents a 43-year-old male patient presented in the outpatient department with complaints of frequent headaches, excessive sweating, and difficulty in concentrating on his stressful work. His left-hand office blood pressure readings were indicated to be 170/92 mmHg using a manual sphygmomanometer and 174/98 mmHg on a digital sphygmomanometer, indicating Stage 2 hypertension. Acupuncture with a sterile needle was administered at Liver 3, Liver 2, Ear Shenmen, and Du 20 points for 20 minutes as an immediate treatment. After the acupuncture session, the patient's blood pressure was reduced to 144/84 mmHg (manual) and 147/88 mmHg (digital). Additionally, the patient experienced relief from headaches. This case highlights the effectiveness of acupuncture for immediate reduction of blood pressure and symptomatic relief in hypertensive patients. It adds value to managing hypertension in integrative healthcare settings such as yoga and naturopathy. However, while these results are promising, further research is needed to validate the effectiveness of acupuncture in broader populations and determine its benefits for acute hypertension management.

Key words: Acupuncture, Hypertension, Liver 3, Naturopathy and yoga, Stage 2 Hypertension.

Hypertension (HTN), or High blood pressure, is the leading global health concern often referred to as a “silent killer” because of its asymptomatic nature in the early stages. It is a major risk factor for cardiovascular disease including hemorrhagic (58%) and ischemic stroke (50%), ischemic heart disease (55%). HTN has been identified as the major risk factor for mortality and the third leading cause of disability-adjusted life years (1).

According to the Joint National Committee 7 (JNC 7), normal blood pressure (BP) is known as systolic blood pressure (SBP) < 120 mmHg and diastolic blood pressure (DBP) < 80 mmHg. HTN is increased office BP with SBP ≥ 140 mmHg and DBP ≥ 90 mmHg. Prehypertension is a BP reading falling between SBP 120–139 mmHg and DBP 80–89 mmHg. The JNC 7 distinguishes two stages of HTN: Stage 1, with SBP 140–159 mmHg or DBP 90–99 mmHg, and Stage 2, with SBP ≥ 160 mmHg or DBP ≥ 100 mmHg (2).

Globally, 41% of women and 51% of men have hypertension; among these individuals, 54% are diagnosed, 42% receive treatment, and only 21% have it effectively controlled (3,4). The risk factors for HTN are obesity, dyslipidemia, age, smoking, and a sedentary lifestyle. HTN is diagnosed using out-of-office blood pressure measurements. Although antihypertensive medication and lifestyle changes can treat HTN, issues such as medication adherence, side effects, and resistance lead some people to seek alternative therapies such as yoga, acupuncture, Tai chi, mindfulness-based stress-reduction programs, and transcendental meditation (5).

Acupuncture is widely practiced in yoga and naturopathy hospitals and is frequently used as a stand-alone therapy to treat hypertension (known in traditional systems as “hard pulse disease”) (6). Sometimes, yoga and naturopathy hospitals face the need for immediate hypertensive

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management because people are unaware of their conditions. In such situations, In such cases, acupuncture may be used to treat acute high blood pressure, but there is no scientific evidence to support the practice. The objective of this case study is to measure the impact of acupuncture on immediate blood pressure control. Studies have reported the immediate reduction of BP through acupuncture and used several combinations of points (7). In this case, acupuncture points were chosen based on traditional and modern concepts to improve BP control.

CASE PRESENTATION

A 43-year-old male patient presented to the Outpatient Department (OPD) at the International Institute of Yoga and Naturopathy Medical Sciences with complaints of frequent headaches, excessive sweating, and difficulty in coping with regular activities such as work, exercise, daily activities over the last 3 to 4 months. He lives in rural areas and works as a software engineer. He denied any past or family medical history. He also stated that he is not on any medications and has no known chronic conditions. On examination, his vital signs showed a blood pressure reading of 174/98 mmHg in the left arm, measured by a digital sphygmomanometer, and a pulse rate of 80 beats per minute. Manual blood pressure monitoring with a mercury sphygmomanometer shows 170/92 mmHg in the left arm. Other systemic examinations were unremarkable, showing no abnormalities.

Based on clinical findings and office BP, the patient was diagnosed with Stage 2 Hypertension as per JNC 7 classification criteria. The patient's medical history and the sudden onset of symptoms indicated that HTN was newly diagnosed. During the initial assessment, no secondary causes of HTN were identified. The patient was advised to undergo immediate acupuncture therapy for hypertensive management. Informed consent was obtained from the patient for publication of this case study and accompanying images.

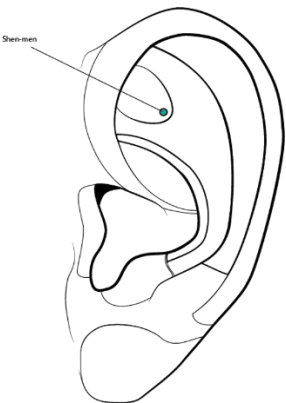


Figure 1: Location of Ear shenmen

Treatment

Considering the significant elevated blood pressure and discomfort, immediate acupuncture intervention is recommended. In yoga and Naturopathy Hospitals,

acupuncture was chosen as the primary treatment based on research highlights. The acupuncture session focused on specific acupoints known for regulating blood pressure. A sterile needle (0.25 × 25, 1 cun) was inserted into Liver 3 (Taichong), Liver 2 (Xingjian) on the left side, Ear Shenmen on both sides and Du 20 (Baihui) for 20 minutes in the supine position.

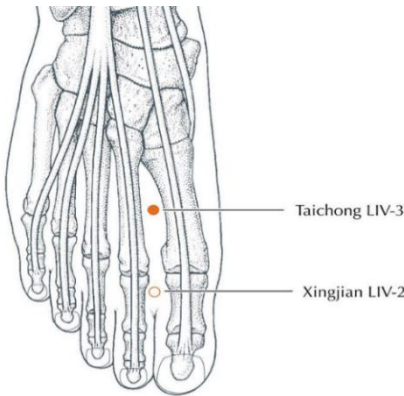


Figure 2: Location of Liver 2, Liver 3

Locations: (Table 1)

Table 1: Locations of acupuncture points

Points	Description	Location	Depth and Direction
Ear shenmen	TCM: Ear shenmen is related to the heart in the ear and affects the afferent vagus nerve	on the ear, a point at the root of the bifurcation of the crura of the antihelix. (figure 1)	0.5 cun / perpendicular direction
Liver 2	TCM: Reduces the Liver yang	on the dorsum of the foot, proximal to the margin of the web between the 1 st and 2 nd toes. (figure 2)	0.5 cun / perpendicular direction
Liver 3	TCM: Reduces the Liver yang	on the dorsum of the foot, the depression distal to the junction of the 1 st and 2 nd metatarsal bones. (figure 2)	0.5 cun / perpendicular direction
Du 20	TCM: meeting point of all meridians	On the vertex of the head, directly above the apex of the ear on the midline of the head (figure 3).	0.5–1 mm depth/obliquely on midline pointed posteriorly.

TCM- Traditional Chinese medicine.

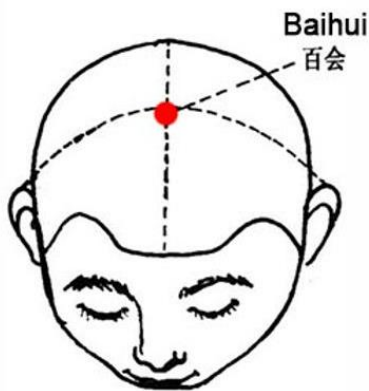


Figure 3: Location of Du 20

RESULT

After 20 minutes of treatment, the patient's blood pressure was measured again, and the digital sphygmomanometer showed a significant reduction to 147/88 mmHg, with a pulse rate of 76 beats per minute. A subsequent manual measurement on the mercury sphygmomanometer reading showed a reduction to 144/84 mmHg, indicating a significant decrease in the systolic and diastolic blood pressure. The patient also reported relief from headaches. The patient was advised to return for follow-up yoga and naturopathy treatments and lifestyle modifications, such as mild physical activity, yoga, dietary changes, and stress management.

DISCUSSION

This study highlights the effectiveness of acupuncture at specific points in reducing blood pressure. The exact mechanism of primary hypertension is still unknown, but research suggests two possible explanations: cardiac output and peripheral resistance. Normal BP depends on cardiac output and peripheral vascular resistance (8). Still, most HTN patients have normal cardiac output but increased peripheral vascular resistance due to the arteriole contraction mediated by the sympathetic or angiotensin system stimulated by stress. Secondly, in the autonomic nervous system, evidence suggests that epinephrine and norepinephrine secretion are mediated by adrenergic stimulation from an unhealthy lifestyle, and this hormone plays a clear role in the development of HTN.

The third renin-angiotensin mechanism regulates blood pressure but has no direct relationship with primary hypertension; instead, it indirectly affects renal blood flow and contributes to HTN. Angiotensin II is a potent vasoconstrictor that causes blood pressure to rise. Additionally, zona glomerulosa of adrenal gland releases aldosterone, which increases the BP and sodium and water retention. Vasoactive substances, endothelial damage, hypercoagulability, and genetic factors all contribute to the development of HTN (9).

Acupuncture is based on traditional Chinese medicine (TCM), with the concept of 'Qi' (vital force), also known as 'Prana' in yoga, that circulates throughout the body in different pathways and is responsible for normal functions of

the body (10). Any disturbance in the circulation caused by emotional or environmental factors leads to excess or deficiency in one or more pathways, leading to disease development. In TCM, HTN is known as 'Hard Pulse Disease,' which is caused by an excess of Liver in the form of liver yang that raises and affects the shen (mind) leading to headaches and difficulty in doing regular activities, and in turn, kidney yin deficiency (a symptom of excess sweating) leading to liver yang excess because the kidney is the mother of liver according to five elemental systems (6).

Doppler studies revealed that acupuncture at Liver 3 significantly reduced peripheral resistance (11). Hypertensive patients exhibit dysregulation of autonomic activity, decreased vagal tone, and increased sympathetic activity (12). Acupuncture at Ear Shenmen activates the parasympathetic system (increases the vagal tone) through the auricular branch of the vagus nerve, collectively affecting different areas in the brain such as the paraventricular nucleus and amygdala and modulating the autonomic nervous system towards parasympathetic dominance.

This, in turn, induces vasodilation, thereby reducing blood pressure (13). Liver 3 (yuan source point) and Liver 2 reduce the excess of liver yang or liver yin deficiency thereby reducing the blood pressure (6). DU 20 is the universal acupoint or sedative point; research indicate that long-term stimulation reduces the blood pressure in rats, along with stomach 36 acupoint (14). According to the review, acupuncture affects the rennin-angiotensin-aldosterone system, reducing reactive oxygen species, and vascular endothelial function, and the neuroendocrine system affects the hypothalamus, reducing the expression of pro-inflammatory cytokines and producing the antihypertensive effect (15, 16).

CONCLUSION

This case demonstrates the efficacy of acupuncture for the rapid treatment of high blood pressure. Highlighting that acupuncture can be used alone in integrated yoga and naturopathy hospitals. This case also indicates the acute reduction of blood pressure; however, long-term effects can be achieved through continued follow-up with lifestyle changes, and regular yoga and diet adjustments were recommended for management of Hypertension. We recommend further research to conclude the effect of acupuncture on large populations to ensure its effectiveness in immediate and long-term benefits.

REFERENCE

1. Carey RM, Muntner P, Bosworth HB, *et al.* Prevention and Control of Hypertension: JACC Health Promotion Series. Vol. 72, Journal of the American College of Cardiology. Elsevier USA; 2018. p. 1278–93.
2. Giles TD, Berk BC, Black HR, *et al.* Expanding the Definition and Classification of Hypertension [Internet]. Available from: www.lejacq.com

3. Kario K, Okura A, Hoshida S, *et al.* The WHO Global report 2023 on hypertension warning the emerging hypertension burden in globe and its treatment strategy. *Hypertens Res.* 2024; 47:1099–102.
4. Singh S, Shankar R, Singh GP. Prevalence and Associated Risk Factors of Hypertension: A Cross-Sectional Study in Urban Varanasi. *Int J Hypertens.* 2017; 2017.
5. Verma N, Rastogi S, Chia YC, *et al.* Non-pharmacological management of hypertension. *J Clin Hypertens.* 2021; 23:1275–83.
6. Sudhakaran P. Acupuncture for hypertension using traditional Chinese medicine concepts. *Med Acupunct.* 2021; 33(1):15–21.
7. Maheshkumar K, Deenadayalan B, Akila A, *et al.* Effectiveness of taichong (LR3) acupuncture point on blood pressure in patients with hypertension: A randomized sham control trial. *Adv Integr Med.* 2021; 8(1):58–62.
8. Mayet J, Hughes A. Cardiac and vascular pathophysiology in hypertension. *Heart.* 2003; 89(9):1104–9.
9. Beevers G, Lip GYH, O'Brien E. The pathophysiology of hypertension [Internet]. Available from: www.bmjbooks.com
10. Zheng H, Li J, Li Y, *et al.* Acupuncture for patients with mild hypertension: A randomized controlled trial. *J Clin Hypertens.* 2019; 21(3):412–20.
11. Takayama S, Watanabe M, Kusuyama H, *et al.* Evaluation of the Effects of Acupuncture on Blood Flow in Humans with Ultrasound Color Doppler Imaging. *Evidence-Based Complementary and Alternative Medicine.* 2012; 2012:1–8.
12. Shanks J, Ramchandra R. Angiotensin II and the Cardiac Parasympathetic Nervous System in Hypertension. *Int J Mol Sci.* 2021; 22(22):12305.
13. Hou PW, Hsu HC, Lin YW, *et al.* The history, mechanism, and clinical application of auricular therapy in traditional Chinese medicine. *Evid Based Complement Alternat Med.* 2015; 2015.
14. Tian GH, Sun K, Huang P, *et al.* Long-term stimulation with electroacupuncture at DU20 and ST36 rescues hippocampal neuron through attenuating cerebral blood flow in spontaneously hypertensive rats. *Evidence-based Complementary and Alternative Medicine.* 2013; 2013.
15. Li J, Sun M, Ye J, *et al.* The Mechanism of Acupuncture in Treating Essential Hypertension: A Narrative Review. 2019, *International Journal of Hypertension.* Hindawi Limited; 2019.
16. Lee H, Kim SY, Park J, *et al.* Acupuncture for lowering blood pressure: Systematic review and meta-analysis. *Am J Hypertens.* 2009; 22(1):122–8.

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