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ACUPUNCTURE-BASED MANAGEMENT OF HYPERTENSION: A DETAILED CASE STUDY

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ABSTRACT

Hypertension is a chronic non-communicable disorder and a major contributor to global cardiovascular morbidity and mortality. The long-term use of pharmacological therapy is often associated with poor compliance and potential adverse effects, thereby necessitating the exploration of complementary therapeutic approaches. Acupuncture, an important modality of Traditional Chinese Medicine, has been increasingly studied for its role in cardiovascular regulation. The present case study evaluates the clinical outcome of acupuncture therapy in a 62-year-old Indian male diagnosed with stage 2 hypertension. The patient underwent acupuncture treatment for a period of twelve weeks with regular monitoring of blood pressure and clinical symptoms. A progressive reduction in systolic and diastolic blood pressure was observed along with improvement in associated symptoms such as headache, dizziness, and sleep disturbances. The findings suggest that acupuncture may serve as an effective and safe therapeutic approach in the management of hypertension.

KEYWORDS: Hypertension, Acupuncture, TCM, Cardiovascular, Nature cure.

1. INTRODUCTION

Hypertension is one of the most prevalent chronic diseases worldwide and represents a major public health concern due to its association with cardiovascular, cerebrovascular, and renal complications. According to global estimates, more than one billion individuals are affected

by hypertension, and its prevalence continues to rise, particularly in developing countries such as India [1].

The increasing burden of hypertension in India is attributed to rapid urbanization, lifestyle transitions, dietary modifications, and an aging population [2]. Epidemiological studies have demonstrated that the prevalence of hypertension in individuals above the age of sixty years is significantly higher, thereby placing this age group at increased risk of complications [3].

Hypertension is clinically defined as a sustained elevation in arterial blood pressure above 140/90 mmHg, although recent guidelines recommend lower thresholds for diagnosis and intervention [4]. The condition is often asymptomatic in its early stages and is therefore referred to as a "silent killer," as it progressively damages target organs including the heart, kidneys, brain, and vasculature without producing overt symptoms [5]. The long-term consequences of uncontrolled hypertension include myocardial infarction, stroke, heart failure, chronic kidney disease, and retinopathy [6].

The pathophysiology of hypertension is complex and multifactorial, involving interactions between genetic predisposition, environmental influences, and physiological mechanisms such as increased sympathetic nervous system activity, activation of the renin-angiotensin-aldosterone system, endothelial dysfunction, and vascular remodeling [7,8]. Lifestyle factors such as high sodium intake, obesity, physical inactivity, alcohol consumption, and psychological stress significantly contribute to the development and progression of hypertension [9].

Conventional management strategies primarily involve pharmacological interventions including calcium channel blockers, angiotensin receptor blockers, beta-blockers, and diuretics [10]. While these medications are effective in controlling blood pressure, long-term therapy is often associated with issues such as poor adherence, adverse effects, and economic burden, particularly in elderly populations [11]. Consequently, there is growing interest in complementary and alternative medicine approaches that can be integrated with conventional care to improve outcomes.

In Traditional Chinese Medicine, hypertension is not described as a single disease entity but is understood in terms of functional imbalances such as Liver Yang Rising, Liver Fire, and Kidney Yin deficiency [12]. These syndromes arise due to disturbances in the balance of Yin

and Yang, Qi stagnation, and dysfunction of Zang-Fu organs. The liver is considered to play a central role in regulating Qi and maintaining smooth energy flow, while the kidneys are responsible for maintaining Yin-Yang balance [13]. When these systems are disrupted, pathological conditions such as hypertension may develop.

Acupuncture is a therapeutic modality that involves stimulation of specific points on the body to restore physiological balance and promote healing. Modern research suggests that acupuncture may exert antihypertensive effects by modulating autonomic nervous system activity, reducing sympathetic outflow, enhancing nitric oxide production, and improving vascular endothelial function [14,15]. Clinical studies have demonstrated that acupuncture can effectively reduce blood pressure and improve overall cardiovascular health [16].

The present case study aims to evaluate the effectiveness of acupuncture therapy in the management of hypertension in an elderly Indian patient, with a focus on integrating traditional concepts with modern clinical understanding.

2. METHODOLOGY

The present study was designed as a single-case clinical observational study conducted over a period of twelve weeks. The patient was evaluated at baseline and subsequently monitored on a weekly basis. Blood pressure measurements were recorded using a standardized sphygmomanometer under resting conditions, and clinical symptoms such as headache, dizziness, sleep quality, and general well-being were assessed during each visit. The intervention consisted exclusively of acupuncture therapy without concurrent antihypertensive medication, thereby allowing evaluation of the independent effect of acupuncture. Sterile disposable needles were used, and all procedures were carried out under aseptic conditions by a trained practitioner. The treatment protocol was standardized but allowed minor adjustments based on the patient's clinical response and Traditional Chinese Medicine diagnosis.

3. CASE PRESENTATION

A 62-year-old male patient from Kalyan, Maharashtra, India, presented with complaints of persistent headache, dizziness, irritability, and disturbed sleep for the past six months at Aai Nature Cure, a Naturopathy centre, located at Kalyan. The patient had a known history of hypertension for approximately ten years but had discontinued antihypertensive medications due to perceived side effects and irregular follow-up. There was no history of diabetes

mellitus, renal disease, or major cardiovascular events. The patient's family history revealed hypertension in his father and cardiovascular disease in his mother. Lifestyle assessment indicated a sedentary routine, moderate psychological stress, and a diet high in salt and fat content.

On general examination, the patient appeared overweight with a body mass index of 28 kg/m². His blood pressure at presentation was recorded as 168/102 mmHg, and pulse rate was 90 beats per minute. Laboratory investigations including fasting blood glucose, renal function tests, and lipid profile were within acceptable limits except for mildly elevated cholesterol levels. Electrocardiography did not reveal any significant abnormalities.

From a Traditional Chinese Medicine perspective, the patient exhibited signs of Liver Yang Rising and Kidney Yin deficiency, as evidenced by symptoms such as irritability, headache, dizziness, red tongue, and wiry pulse. This pattern indicated an imbalance between Yin and Yang, with excessive upward movement of Liver Yang due to insufficient anchoring by Kidney Yin.

4. TREATMENT PROTOCOL

The patient was treated with acupuncture therapy three times per week for a duration of twelve weeks. Each session lasted approximately thirty minutes, with needle retention time of twenty to twenty-five minutes. The selected acupoints included **Baihui (DU20), Taichong (LR3), Quchi (LI11), Zusanli (ST36), Sanyinjiao (SP6), Taixi (KI3), Neiguan (PC6), and Fengchi (GB20).** These points were chosen based on their classical indications for calming Liver Yang, nourishing Kidney Yin, regulating Qi, and improving circulation.

The therapeutic principle involved subduing the hyperactive Liver Yang, nourishing the deficient Kidney Yin, and restoring the balance of Yin and Yang. The stimulation of these acupoints was expected to regulate autonomic nervous system activity and improve vascular function.

5. RESULTS

At the end of four weeks of treatment, the patient's blood pressure showed a reduction to 150/95 mmHg, accompanied by a decrease in headache intensity and improved sleep quality. After eight weeks, blood pressure further reduced to 138/88 mmHg, and the patient reported significant improvement in overall well-being and reduction in dizziness. At the completion

of twelve weeks, blood pressure was recorded as 126/82 mmHg, which falls within the near-normal range. The patient also reported improved energy levels, reduced irritability, and better sleep patterns. No adverse effects were observed during the course of treatment. The results and observations are depicted in table 1-4.

Table 1: Weekly Blood Pressure Monitoring.

Week	Systolic BP (mmHg)	Diastolic BP (mmHg)
Baseline (Week 0)	168	102
Week 1	162	100
Week 2	158	98
Week 3	154	96
Week 4	150	95
Week 5	146	92
Week 6	142	90
Week 7	140	89
Week 8	138	88
Week 9	134	86
Week 10	132	85
Week 11	130	84
Week 12	126	82

Table 2: Symptom Severity Score (0 = None, 10 = Severe).

Symptom	Baseline	Week 4	Week 8	Week 12
Headache	8	5	3	1
Dizziness	7	4	2	1
Irritability	6	4	2	1
Sleep Disturbance	7	5	3	1
Fatigue	6	4	3	1

Table 3: Quality of Life Assessment (Subjective Scale 1–10).

Parameter	Baseline	Week 6	Week 12
Energy Levels	4	6	8
Sleep Quality	3	6	8
Mental Calmness	4	6	9
Daily Activity Performance	5	7	9

Table 4: Pulse and General Clinical Parameters.

Parameter	Baseline	Week 6	Week 12
Pulse Rate (bpm)	90	84	78
BMI (kg/m²)	28	27.5	27
Stress Level (Subjective 1–10)	7	5	3

6. DISCUSSION

The present case study demonstrates that acupuncture therapy can significantly reduce blood pressure and improve associated symptoms in a patient with hypertension. Similar to the discussion presented in the reference article, the importance of early intervention and individualized treatment is emphasized. The observed antihypertensive effect of acupuncture may be attributed to its influence on neurohumoral regulation, including reduction of sympathetic nervous system activity and modulation of the renin-angiotensin system [17].

From a Traditional Chinese Medicine perspective, the reduction in blood pressure can be explained by the restoration of Yin-Yang balance and normalization of Qi flow. The selected acupoints effectively targeted the underlying pathophysiological mechanisms, particularly the excessive Liver Yang and deficient Kidney Yin. Modern studies have shown that acupuncture can enhance nitric oxide production, leading to vasodilation and improved blood flow [18-20].

The improvement in symptoms such as headache, dizziness, and sleep disturbances further supports the holistic benefits of acupuncture therapy. Unlike pharmacological treatments, acupuncture is associated with minimal side effects and may improve patient compliance. However, the findings of this study are limited by its single-case design, and further large-scale clinical trials are required to validate these results.

7. CONCLUSION

This case study highlights the potential of acupuncture as an effective and safe therapeutic modality for the management of hypertension. The significant reduction in blood pressure and improvement in quality of life observed in this patient suggest that acupuncture may serve as a valuable complementary or alternative treatment option. Integration of traditional and modern medical approaches may provide a more comprehensive strategy for managing chronic conditions such as hypertension.

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