



Case Study

## IMPACT OF BRAHMI CHURNA AND HEARTFULNESS MEDITATION AS AN ADJUNCT ON PSYCHOLOGICAL ATTRIBUTES AND CARDIOVASCULAR RISK IN ESSENTIAL HYPERTENSION

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### ABSTRACT


Hypertension is a major risk factor for cardiovascular disease and is frequently associated with comorbid conditions such as hypothyroidism and psychological distress, including anxiety, sleep disturbances, and reduced quality of life. Psychological stress further contributes to cardiovascular risk through autonomic and metabolic mechanisms. Integrative approaches including Ayurvedic *Medhya Rasayana* and meditation may help address both psychological and cardiovascular risk factors. **Case Description:** A 42-year-old hypertensive female with hypothyroidism presented with uneasiness, palpitations, and disturbed sleep. She was on Lodoz 2.5mg and Thyronorm 50mcg. The patient was administered *Bacopa monnieri (Brahmi) churna* 3g twice daily for 45 days along with lifestyle modification and Heartfulness meditation. **Assessments:** Psychological parameters were assessed using POMS, MHC-SF, HARS, SPANE, Flourishing Scale, and WHOQOL-BREF. Cardiovascular risk assessment included blood pressure, lipid profile, and Framingham Risk Score. **Results:** Marked improvement was observed in anxiety, mood, mental well-being, and quality of life scores. Lipid profile and blood pressure improved, and Framingham Risk Score reduced from 4.68% to 3.95%, indicating reduced cardiovascular risk. No adverse events were reported. **Conclusion:** *Bacopa monnieri* as an adjunct to standard therapy, along with lifestyle modification and meditation, may improve psychological well-being and reduce cardiovascular risk in hypertensive patients. Further clinical studies are required to confirm these findings.

### INTRODUCTION

Essential hypertension, also referred to as primary or idiopathic hypertension, is defined as persistently elevated blood pressure without an identifiable secondary cause, typically characterized by a systolic blood pressure (SBP) of  $\geq 140$ mm Hg, a diastolic blood pressure (DBP) of  $\geq 90$ mm Hg, or both, measured on multiple occasions.<sup>[1]</sup> The control rate of hypertension in India is alarmingly low, and uncontrolled blood pressure (BP) is a major risk factor for both microvascular and macrovascular complications, as well as stroke, coronary heart

disease, chronic kidney disease, retinopathy, and more.<sup>[2]</sup> In addition to hypertension, mental disorders are a significant public health concern. Individuals with hypertension experience a wide range of intense emotions, which increase their susceptibility to mental health problems, particularly depression and anxiety.<sup>[3]</sup>

In recent years, there has been increasing interest in integrative approaches for the management of chronic lifestyle disorders, particularly those involving psychological stress and cardiovascular risk. Ayurvedic *Medhya Rasayana* drugs are known to promote cognitive function, emotional stability, and stress resilience. *Bacopa monnieri (Brahmi)* is one of the most important *Medhya Rasayana* described in Ayurveda for improving memory, intellect, and mental health, and for managing stress-related disorders.

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Modern pharmacological research has demonstrated that *Bacopa monnieri* possesses anxiolytic, antidepressant, adaptogenic, antioxidant, and neuroprotective properties. Its active constituents, primarily bacosides, have been shown to enhance neuronal communication, modulate cholinergic and GABAergic systems, and reduce oxidative stress, thereby improving cognitive performance and emotional regulation.<sup>[4]</sup> Clinical studies have reported that *Brahmi* improves memory, attention, mood, and stress adaptation in both healthy individuals and patients with anxiety and cognitive impairment.<sup>[5]</sup>

Meditation is another important non-pharmacological intervention that has shown significant benefits in reducing stress, anxiety, and cardiovascular risk. Meditation practices help reduce sympathetic overactivity and improve parasympathetic activity, resulting in reduction in blood pressure, heart rate, and stress hormone levels<sup>[5]</sup>. Heartfulness meditation, a form of heart-based meditative practice, has been reported to improve emotional regulation, sleep quality, mental well-being, and overall quality of life.<sup>[6]</sup>

Since psychological stress, anxiety, and emotional disturbances are important contributors to hypertension and cardiovascular disease, interventions that target both mental health and cardiovascular risk factors may provide better long-term outcomes. Therefore, the present case report was undertaken to evaluate the effect of *Bacopa monnieri* (*Brahmi*) Churna and Heartfulness meditation as an adjunct therapy on psychological well-being, quality of life, and cardiovascular risk in a patient with essential hypertension.

**Patient Information**

A 42-year-old female school teacher presented with complaints of uneasiness, palpitations, and disturbed sleep for the past three months. She was a

known case of hypertension for three years and hypothyroidism for seven years and was on Tab. Lodoz 2.5mg once daily and Tab. Thyronorm 50mcg once daily, respectively. The patient had undergone hysterectomy in the past. There was no any history of addictions.

Her height was 157cm and weight was 87kg. Baseline vital parameters showed blood pressure of 136/86 mmHg, pulse rate 76/min, and respiratory rate 19/min.

**Clinical Assessments**

Clinical assessment included blood pressure monitoring, pulse rate, lipid profile, and Framingham Risk Score (FRS) for cardiovascular risk assessment. Psychological assessment was performed using validated psychometric tools including Hamilton Anxiety Rating Scale (HARS), Profile of Mood States (POMS), Mental Health Continuum Short Form (MHC-SF), Scale of Positive and Negative Experience (SPANE), Flourishing Scale, and WHOQOL-BREF. The patient was assessed at baseline, during intervention (day 15 and day 30), at completion of intervention (day 45), and post-treatment follow-up (day 90).

**Therapeutic Intervention**

The patient was administered *Bacopa monnieri* (*Brahmi*) Churna 3g twice daily with water after meals for 45 days. Along with this, heartfulness meditation was advised.

**RESULTS**

**Psychological Outcomes**

The patient showed progressive improvement in psychological parameters. Anxiety scores reduced from moderate severity to minimal levels. Mood stability, emotional well-being, and quality of life improved significantly by day 45 and remained sustained at day 90 follow-up.

**Table 1. Changes in Psychological and Quality of Life Scores**

Assessment Tool	Baseline	Day 45	Day 90	Remark
HARS	21	5	5	Anxiety markedly reduced
POMS	-33	-39	-39	Emotional stability improved
MHC-SF	56	60	60	Enhanced mental well-being
SPANE-B	8	18	18	Increased positive affect
Flourishing Scale	44	48	48	Better psychological flourishing
WHOQOL-BREF	80	96	95	Quality of life improved

**Cardiovascular Outcomes**

There was improvement in blood pressure and lipid profile after intervention. Framingham Risk Score decreased from 4.68% to 3.95%, indicating reduction in 10-year cardiovascular risk.

**Table 2. Changes in Cardiovascular Risk Parameters**

Parameter	Baseline	Day 45	Remark
Total Cholesterol	196	120	Reduced
LDL-C	105	99	Reduced
VLDL-C	37	29.2	Reduced
HDL-C	54	49	Acceptable range
Triglycerides	184	146	Normalized
Framingham Risk Score (%)	4.68	3.95	Decreased CV risk

Blood pressure reduced from 136/86mmHg at baseline to 120/78mmHg after treatment. Pulse rate also showed stabilization over the intervention period.

No adverse drug reactions or herb–drug interactions were reported during the study period, and patient compliance was good.

### DISCUSSION

Hypertension is a multifactorial disorder involving hemodynamic, metabolic, and psychological factors. Psychological stress and anxiety contribute significantly to cardiovascular risk through autonomic imbalance, increased sympathetic activity, inflammation, and endothelial dysfunction.<sup>[7]</sup>

From an Ayurvedic perspective, hypertension can be understood as a disorder involving *Manasika Dosh* (*Rajas* and *Tamas*) and *Rasa Vaha Srotas Dushti*, leading to circulatory disturbance and mental stress. *Bacopa monnieri* (*Brahmi*) is described as a *Medhya Rasayana*, which improves cognitive function, emotional stability, and stress adaptation.

Modern pharmacological studies have demonstrated that *Bacopa monnieri* possesses anxiolytic, adaptogenic, antioxidant, and neuroprotective properties. The mechanism of action includes modulation of the GABAergic system, antioxidant activity, and regulation of the hypothalamic–pituitary–adrenal axis, which may explain its effect on anxiety, mood, and sleep.<sup>[8]</sup> Clinical studies have also reported improvement in mood, stress, and cognitive performance following Brahmi administration.<sup>[9]</sup>

Meditation and pranayama are known to reduce sympathetic overactivity and improve parasympathetic tone, thereby reducing blood pressure and cardiovascular risk (Brook et al., 2013). The combined effect of *Brahmi*, meditation, and lifestyle modification may explain the improvement observed in psychological scores, blood pressure, lipid profile, and Framingham Risk Score in this patient.

The reduction in Framingham Risk Score suggests a decrease in long-term cardiovascular risk,

which may be attributed to improved lipid profile, blood pressure control, stress reduction, and lifestyle modification.<sup>[10]</sup>

However, this is a single case report and cannot be generalized. Further clinical trials with larger sample sizes are required to establish the role of *Brahmi* and heartfulness meditation as an adjunct therapy in hypertension and cardiovascular risk reduction.

### CONCLUSION

This case report demonstrates that *Bacopa monnieri* (*Brahmi*) Churna and heartfulness meditation as adjunct therapy in a hypertensive patient resulted in significant improvement in psychological well-being, quality of life, blood pressure, lipid profile, and Framingham cardiovascular risk score without any adverse effects. The findings suggest that *Brahmi* along with heartfulness meditation may play a supportive role in the integrative management of hypertension and associated psychological disturbances. Further clinical studies are recommended to validate these findings.

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