



RESEARCH ARTICLE

ROLE OF YOGA IN THE MANAGEMENT OF HYPERTENSION: A PROSPECTIVE HOSPITAL-BASED STUDY

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Abstract

Hypertension is a major global health challenge and a leading risk factor for cardiovascular morbidity and mortality. Despite advances in pharmacological therapy, long-term blood pressure control remains suboptimal in many patients. Yoga, a holistic mind-body practice incorporating asanas, pranayama, meditation, and relaxation techniques, has emerged as a promising complementary intervention. This prospective hospital-based study evaluated the effectiveness of yoga as an adjunct to standard antihypertensive therapy in 100 hypertensive patients. Participants receiving yoga demonstrated greater reductions in systolic and diastolic blood pressure, along with improvements in heart rate, respiratory rate, and body mass index. The findings support yoga as a safe, affordable, and effective adjunctive strategy in hypertension management.

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Introduction:-

Hypertension affects more than one billion people worldwide and remains a major contributor to coronary artery disease, stroke, heart failure, chronic kidney disease, and premature mortality. Lifestyle modification is a cornerstone of hypertension management. Yoga combines physical postures, controlled breathing, meditation, and relaxation practices that may reduce sympathetic overactivity, improve autonomic balance, decrease stress, and enhance cardiovascular health. Aim and Objectives To evaluate the role of yoga as a complementary intervention in hypertensive patients and assess its effects on blood pressure, heart rate, respiratory rate, and body mass index.

Review of Literature:-

Several clinical studies have demonstrated significant reductions in blood pressure following structured yoga interventions. Previous investigations by Deepa et al., Hagins et al., Cramer et al., and Dhungana et al. reported improvements in systolic and diastolic blood pressure, autonomic function, stress levels, and quality of life. Meta-analyses have further supported yoga as an effective adjunctive therapy for hypertension.

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Pathophysiological Basis:-

The antihypertensive effects of yoga are mediated through multiple mechanisms including reduction of sympathetic nervous system activity, enhancement of parasympathetic tone, improved baroreceptor sensitivity, reduction in cortisol levels, improved endothelial function, better sleep quality, and favorable effects on body weight and metabolic parameters.

Materials and Methods:-

This prospective hospital-based study was conducted in the Department of General Medicine, Muzaffarnagar Medical College. One hundred hypertensive patients aged 40–80 years were enrolled after obtaining informed consent. Fifty participants were assigned to the Yoga group and fifty to the Control group. Inclusion criteria included diagnosed hypertension and willingness to participate. Exclusion criteria included secondary hypertension, severe cardiovascular disease, pregnancy, and inability to perform yoga practices. Statistical analysis was performed using SPSS version 30, and a p-value <0.05 was considered statistically significant.

Yoga Intervention:-

The yoga protocol included loosening exercises, Tadasana, Trikonasana, Vajrasana, Ardhakati Chakrasana, Vakrasana, Matsyasana, Bhramari Pranayama, breathing exercises, meditation, and relaxation techniques. Sessions were supervised and continued for 24 weeks along with standard antihypertensive therapy.

Results:-

A total of 100 participants completed the study. Mean age was comparable between groups (54.5 years in the Yoga group versus 54.6 years in the Control group). Systolic blood pressure decreased from 149.56 ± 12.14 mmHg to 132.84 ± 5.65 mmHg in the Yoga group at 6 months ($p < 0.001$), whereas the Control group demonstrated a smaller reduction. Diastolic blood pressure decreased from 92.76 ± 9.15 mmHg to 80.64 ± 4.40 mmHg ($p < 0.001$). Significant improvements were also observed in resting heart rate, respiratory rate, and body mass index in the Yoga group.

Discussion:-

The present study demonstrated that yoga, when practiced alongside standard antihypertensive therapy, resulted in superior blood pressure control compared with conventional therapy alone. These findings are consistent with previous studies and suggest that yoga improves cardiovascular regulation through autonomic modulation, stress reduction, and enhanced physical fitness. The observed improvements in BMI and cardiorespiratory parameters further support the role of yoga in comprehensive cardiovascular risk reduction.

Limitations:-

This was a single-center study with a relatively small sample size. Longer follow-up and multicenter randomized controlled trials are required to validate these findings and establish standardized yoga protocols.

Conclusion:-

Yoga is a safe, cost-effective, and accessible adjunct to standard antihypertensive therapy. The present study demonstrated significant reductions in blood pressure and improvements in physiological parameters among hypertensive patients practicing yoga. Incorporation of structured yoga programs into routine hypertension management may improve long-term cardiovascular outcomes.