

Cardiovascular Health in Ayurveda: Integrative Approaches for Hypertension and Coronary Artery Disease

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Abstract

This paper explores the principles of Ayurveda in managing cardiovascular health, focusing on hypertension and coronary artery disease (CAD). Ayurveda, an ancient Indian system of medicine, offers a holistic approach to health and well-being. Integrating Ayurvedic principles with modern medical interventions can potentially provide comprehensive care for cardiovascular conditions. The paper discusses the etiology and pathophysiology of hypertension and CAD from both Ayurvedic and conventional perspectives. It then examines the Ayurvedic concepts of doshas, dhatus, and malas in relation to cardiovascular health. The role of diet, lifestyle modifications, herbal remedies, and yoga in managing hypertension and CAD according to Ayurveda is explored. Furthermore, the paper discusses the evidence-based approaches and challenges in integrating Ayurveda with modern cardiology for improved patient outcomes. It concludes by emphasizing the importance of collaborative efforts between Ayurvedic practitioners and conventional healthcare providers in managing cardiovascular diseases.

Keywords: *Ayurveda, cardiovascular health, hypertension, coronary artery disease, integrative medicine, holistic approach, doshas, diet, lifestyle modifications, herbal remedies, yoga, evidence-based medicine*

INTRODUCTION

In the introduction, we lay the groundwork for the paper by highlighting the continued prevalence of cardiovascular diseases (CVDs) globally, with particular emphasis on

hypertension and coronary artery disease (CAD). Despite advancements in modern medicine, there is a growing interest in exploring complementary and alternative approaches, such as those offered by Ayurveda. Ayurveda, an ancient Indian system of medicine, provides a holistic approach to health, focusing on achieving balance and harmony between the mind, body, and spirit. This section sets the stage for the exploration of integrative approaches derived from Ayurveda for managing hypertension and CAD, while also acknowledging the potential benefits and challenges associated with integrating these practices into conventional cardiology.

Global Burden of Cardiovascular Diseases (CVDs): Cardiovascular diseases remain a leading cause of morbidity and mortality worldwide, imposing a significant burden on healthcare systems and economies. According to the World Health Organization (WHO), CVDs account for a substantial proportion of global deaths annually, with hypertension and CAD being major contributors to this burden. The prevalence of these conditions underscores the urgent need for effective prevention and management strategies.

Advancements in Modern Medicine: Modern medicine has made significant strides in the diagnosis, treatment, and prevention of cardiovascular diseases. From innovative diagnostic techniques to cutting-edge interventions such as percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG), conventional cardiology offers a wide array of therapeutic options for patients with hypertension and CAD. However, despite these advancements, many patients continue to experience suboptimal outcomes, leading to a search for alternative approaches.

Interest in Complementary and Alternative Medicine: There is a growing interest among patients and healthcare providers in complementary and alternative approaches to healthcare. Traditional systems of medicine, such as Ayurveda, Traditional Chinese Medicine (TCM), and herbal medicine, offer unique perspectives and therapeutic modalities that differ from conventional Western medicine. These approaches often focus on addressing the root causes of disease, promoting wellness, and restoring balance to the body's natural systems.

Ayurveda: The Science of Life: Ayurveda, which translates to "the science of life," is an ancient system of medicine that originated in India over 5,000 years ago. Rooted in the

concept of holistic health, Ayurveda emphasizes the interconnectedness of the mind, body, and spirit in maintaining overall well-being. Central to Ayurvedic philosophy is the belief that health is achieved through balance and harmony, and disease arises from imbalances within the body. Ayurvedic interventions typically involve personalized lifestyle modifications, dietary changes, herbal remedies, and therapeutic practices such as yoga and meditation.

Objectives of the Paper: The primary objective of this paper is to explore integrative approaches derived from Ayurveda for managing hypertension and CAD. By examining the principles and practices of Ayurveda in relation to cardiovascular health, we aim to shed light on the potential benefits of incorporating these approaches into conventional cardiology. Additionally, we will discuss the challenges and considerations associated with integrating Ayurveda into mainstream healthcare, with the ultimate goal of improving patient outcomes and promoting holistic well-being.

Table 1: Global Burden of Cardiovascular Diseases

Aspect	Statistics
Global Deaths	CVDs account for approximately 17.9 million deaths annually worldwide [1].
Leading Causes	Hypertension and CAD are major contributors to the burden of CVDs [2].
Economic Impact	CVDs impose a significant economic burden on healthcare systems globally [3].

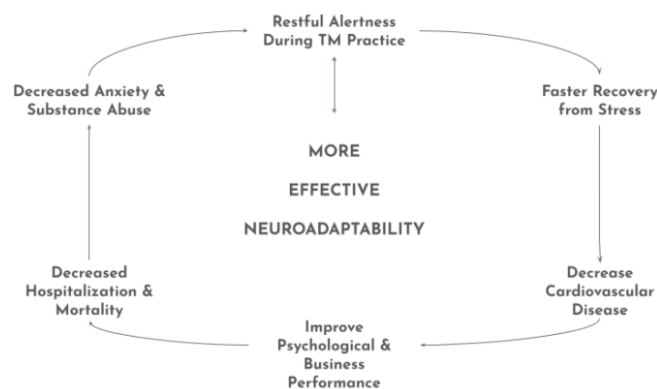


Figure 1: Comparison of Modern Medicine and Ayurveda in Cardiovascular Health

ETIOLOGY AND PATHOPHYSIOLOGY

In this section, we delve into the etiology and pathophysiology of hypertension and coronary artery disease (CAD), examining both Ayurvedic and conventional perspectives to gain a comprehensive understanding of these complex cardiovascular conditions.

- 1. Etiology of Hypertension and CAD:** Hypertension and CAD are multifactorial diseases influenced by a combination of genetic, environmental, and lifestyle factors. In conventional medicine, hypertension is often attributed to factors such as obesity, high salt intake, sedentary lifestyle, and genetic predisposition. Similarly, CAD is primarily caused by atherosclerosis, a condition characterized by the buildup of plaque in the coronary arteries, leading to narrowing and reduced blood flow to the heart muscle.
- 2. Ayurvedic Perspective on Etiology:** In Ayurveda, diseases are believed to arise from imbalances in the three doshas—Vata, Pitta, and Kapha. Hypertension and CAD are considered manifestations of doshic imbalances, with specific doshas playing a predominant role in each condition. For example, hypertension may be associated with aggravated Pitta dosha, leading to increased heat and inflammation in the body, while CAD may be linked to imbalances in both Pitta and Kapha doshas, affecting the cardiovascular system.
- 3. Pathophysiological Mechanisms:** From a conventional standpoint, hypertension is characterized by elevated blood pressure, resulting from increased peripheral vascular resistance and/or cardiac output. CAD, on the other hand, involves the progressive narrowing of coronary arteries due to the accumulation of cholesterol-rich plaques, leading to ischemia and potential myocardial infarction. These pathophysiological mechanisms underscore the importance of targeting both systemic and local factors in the management of hypertension and CAD.
- 4. Ayurvedic Insights into Pathophysiology:** Ayurvedic texts describe the pathogenesis of hypertension and CAD in terms of doshic disturbances affecting the heart (Hridroga) and blood vessels (Raktavahasrotas). According to Ayurveda, imbalances in doshas disrupt the natural functions of the cardiovascular system, leading to symptoms such as palpitations, chest pain, and shortness of breath. Understanding these underlying imbalances is crucial for devising personalized treatment strategies in Ayurveda.

Table 2: Etiology of Hypertension and CAD

Aspect	Conventional Medicine	Ayurvedic Perspective
Hypertension	Obesity, high salt intake, sedentary lifestyle	Aggravated Pitta dosha, heat, and inflammation
CAD	Atherosclerosis, plaque buildup in coronary arteries	Imbalances in Pitta and Kapha doshas

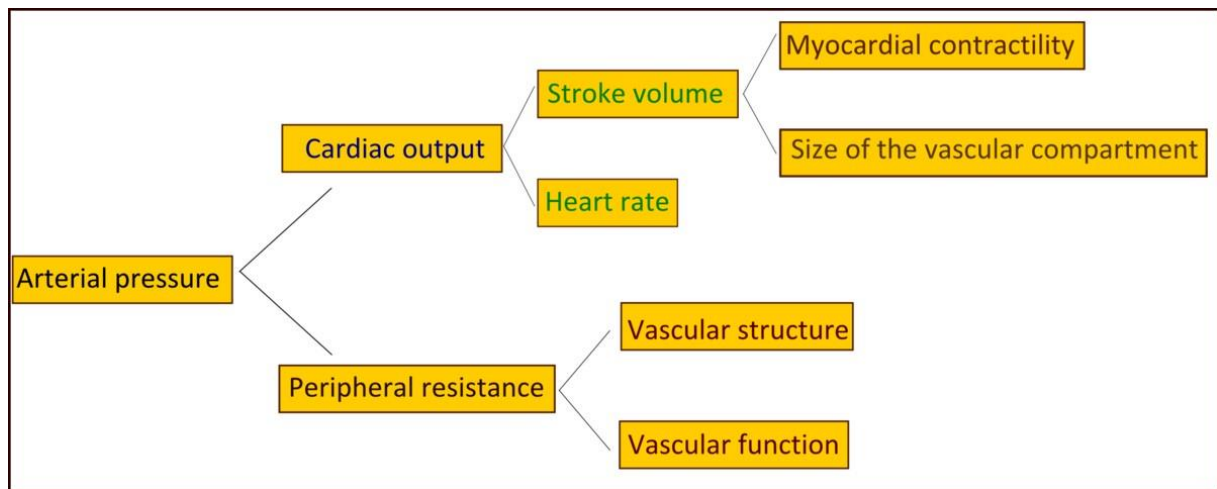


Figure 2: Pathophysiological Mechanisms of Hypertension and CAD

AYURVEDIC CONCEPTS IN CARDIOVASCULAR HEALTH

In this section, we delve into Ayurvedic concepts related to cardiovascular health, focusing on doshas, dhatus, and malas, and their implications for disease predisposition and management. We explore the role of diet, lifestyle, and daily routines in maintaining doshic equilibrium, and discuss the interconnectedness of bodily functions as described in Ayurvedic texts.

- Doshas in Cardiovascular Health:** Ayurveda posits that the human body is governed by three doshas—Vata, Pitta, and Kapha—which represent the fundamental energies responsible for physiological processes. Imbalances in these doshas can predispose individuals to various diseases, including those affecting the cardiovascular system. For example, an aggravated Pitta dosha may manifest as inflammation and heat, contributing to conditions like hypertension, while imbalances in Kapha dosha may lead to congestion and stagnation, predisposing individuals to CAD.
- Role of Diet and Lifestyle:** Ayurveda emphasizes the importance of diet, lifestyle, and daily routines in maintaining doshic equilibrium and promoting overall health. Dietary

recommendations are personalized based on an individual's constitution (Prakriti) and imbalances (Vikriti), with an emphasis on wholesome, natural foods that pacify aggravated doshas. Similarly, lifestyle modifications such as regular exercise, adequate sleep, stress management, and mindful living are integral to Ayurvedic approaches for preventing and managing cardiovascular diseases.

3. **Dhatus and Malas in Cardiovascular Health:** Ayurvedic texts describe the importance of dhatus (tissues) and malas (waste products) in maintaining cardiovascular health. Proper nourishment and elimination of waste products are essential for the optimal functioning of the cardiovascular system. Imbalances in dhatus or impaired elimination of malas can disrupt the normal physiological processes, leading to the accumulation of toxins (ama) and predisposing individuals to cardiovascular diseases.

Table 3: Role of Doshas, Dhatus, and Malas in Cardiovascular Health

Aspect	Ayurvedic Perspective
Doshas	Imbalances in Vata, Pitta, and Kapha doshas predispose to cardiovascular diseases.
Diet and Lifestyle	Personalized dietary and lifestyle modifications help maintain doshic equilibrium and promote cardiovascular health.
Dhatus	Proper nourishment of dhatus is crucial for optimal cardiovascular function.
Malas	Efficient elimination of malas prevents the accumulation of toxins and supports cardiovascular health.



Figure 3: Interconnectedness of Doshas, Dhatus, and Malas

DIETARY AND LIFESTYLE MODIFICATIONS

In this section, we explore the dietary and lifestyle modifications advocated by Ayurveda for preventing and managing hypertension and coronary artery disease (CAD). These recommendations are personalized based on an individual's constitution (Prakriti) and imbalances (Vikriti) and aim to pacify aggravated doshas while promoting overall health and well-being.

Dietary Recommendations: Ayurveda emphasizes the importance of diet in maintaining doshic equilibrium and supporting cardiovascular health. Dietary recommendations are tailored to individual constitutions and imbalances, with an emphasis on consuming wholesome, natural foods that promote digestive strength and pacify aggravated doshas. Key dietary guidelines for hypertension and CAD may include:

- **Emphasis on Whole Foods:** Consumption of whole grains, fresh fruits, vegetables, legumes, and nuts is encouraged to provide essential nutrients and fiber while minimizing processed foods and refined sugars.
- **Balancing Doshas:** Foods that pacify aggravated doshas are recommended. For example, individuals with hypertension may benefit from a diet that is cooling and calming to balance excess Pitta dosha, while those with CAD may require a diet that is lighter and easier to digest to prevent aggravation of Kapha dosha.
- **Moderation in Salt and Fats:** Limiting intake of high-sodium foods and unhealthy fats is advised to manage hypertension and reduce the risk of CAD. Instead, using herbs and spices for flavoring and opting for healthier fats from sources such as nuts, seeds, and olive oil can be beneficial.

Lifestyle Modifications: Lifestyle factors play a significant role in the development and management of cardiovascular diseases. Ayurveda emphasizes the importance of holistic lifestyle modifications to support overall health and well-being. Key lifestyle recommendations for hypertension and CAD may include:

- **Regular Exercise:** Engaging in regular physical activity helps improve cardiovascular fitness, lower blood pressure, and reduce the risk of CAD. Activities such as walking, swimming, yoga, and tai chi are particularly beneficial and can be tailored to individual preferences and fitness levels.

- **Adequate Sleep:** Quality sleep is essential for overall health and vitality. Ayurveda recommends establishing a regular sleep routine, creating a restful sleep environment, and practicing relaxation techniques to promote restorative sleep and reduce stress.
- **Stress Management:** Chronic stress can contribute to hypertension and CAD by increasing blood pressure and promoting inflammation. Ayurvedic techniques such as meditation, deep breathing exercises, and mindfulness practices can help mitigate the effects of stress and promote emotional well-being.
- **Mindful Living:** Cultivating awareness and mindfulness in daily life can enhance the mind-body connection and support overall health. Practices such as mindful eating, gratitude journaling, and spending time in nature can foster a sense of balance and harmony.

Table 4: Dietary Recommendations for Hypertension and CAD

Aspect	Dietary Recommendations
Whole Foods	Emphasize whole grains, fruits, vegetables, legumes, and nuts.
Balancing Doshas	Consume foods that pacify aggravated doshas.
Moderation in Salt and Fats	Limit intake of high-sodium foods and unhealthy fats.

Table 5: Lifestyle Modifications for Hypertension and CAD

Aspect	Lifestyle Modifications
Regular Exercise	Engage in activities such as walking, swimming, yoga.
Adequate Sleep	Establish a regular sleep routine and create a restful sleep environment.
Stress Management	Practice meditation, deep breathing, and mindfulness.
Mindful Living	Cultivate awareness and mindfulness in daily life.

These dietary and lifestyle modifications form the cornerstone of Ayurvedic approaches to preventing and managing hypertension and CAD. By integrating these recommendations into daily routines, individuals can support cardiovascular health and promote overall well-being.

HERBAL REMEDIES

In this section, we explore the role of herbal remedies in Ayurveda for supporting cardiovascular health, focusing on key medicinal plants with purported cardioprotective properties. We discuss the traditional uses of these herbs and highlight scientific evidence supporting their efficacy and safety in managing hypertension, improving lipid profiles, and reducing oxidative stress.

Herbal Remedies in Ayurveda: Ayurveda utilizes a wide range of medicinal plants to address various health conditions, including those affecting the cardiovascular system. Herbal remedies are often formulated based on the principles of Ayurvedic pharmacology, which considers factors such as taste, potency, and post-digestive effect. These herbs are traditionally prepared as decoctions, powders, or herbal formulations and are administered orally or topically as per individual needs.

Key Medicinal Plants for Cardiovascular Health: Several medicinal plants have been traditionally used in Ayurveda for supporting cardiovascular health and managing conditions such as hypertension and CAD. Some of the key herbs with purported cardioprotective properties include:

- **Arjuna (*Terminalia arjuna*):** Arjuna is revered in Ayurveda for its cardio-protective effects and is commonly used to support heart function, improve cardiac output, and regulate blood pressure. It contains bioactive compounds such as arjunic acid, flavonoids, and tannins, which exert antioxidant, anti-inflammatory, and anti-atherosclerotic effects.
- **Ashwagandha (*Withaniasomnifera*):** Ashwagandha, also known as Indian ginseng, is a potent adaptogen with diverse therapeutic properties. It has been shown to reduce stress, lower blood pressure, and improve cardiovascular function by modulating the autonomic nervous system and reducing oxidative stress.
- **Brahmi (*Bacopa monnieri*):** Brahmi is renowned for its neuroprotective and cognitive-enhancing properties, but it also exhibits significant cardiovascular benefits. It helps reduce oxidative stress, improve endothelial function, and enhance cerebral blood flow, thereby supporting overall cardiovascular health.

Scientific Evidence and Clinical Studies: There is growing scientific interest in validating the efficacy and safety of herbal remedies for cardiovascular health through rigorous clinical

studies. Research studies have demonstrated the beneficial effects of herbs such as Arjuna, Ashwagandha, and Brahmi in managing hypertension, improving lipid profiles, and reducing inflammation and oxidative stress markers. These findings support the integration of herbal remedies into conventional cardiovascular therapy as promising adjuncts or alternatives.

Table 6: Key Medicinal Plants for Cardiovascular Health

Medicinal Plant	Traditional Uses	Scientific Evidence
Arjuna	Supports heart function, regulates blood pressure	Antioxidant, anti-inflammatory, anti-atherosclerotic effects
Ashwagandha	Reduces stress, lowers blood pressure	Modulates autonomic nervous system, reduces oxidative stress
Brahmi	Improves cognitive function, enhances cerebral blood flow	Reduces oxidative stress, improves endothelial function

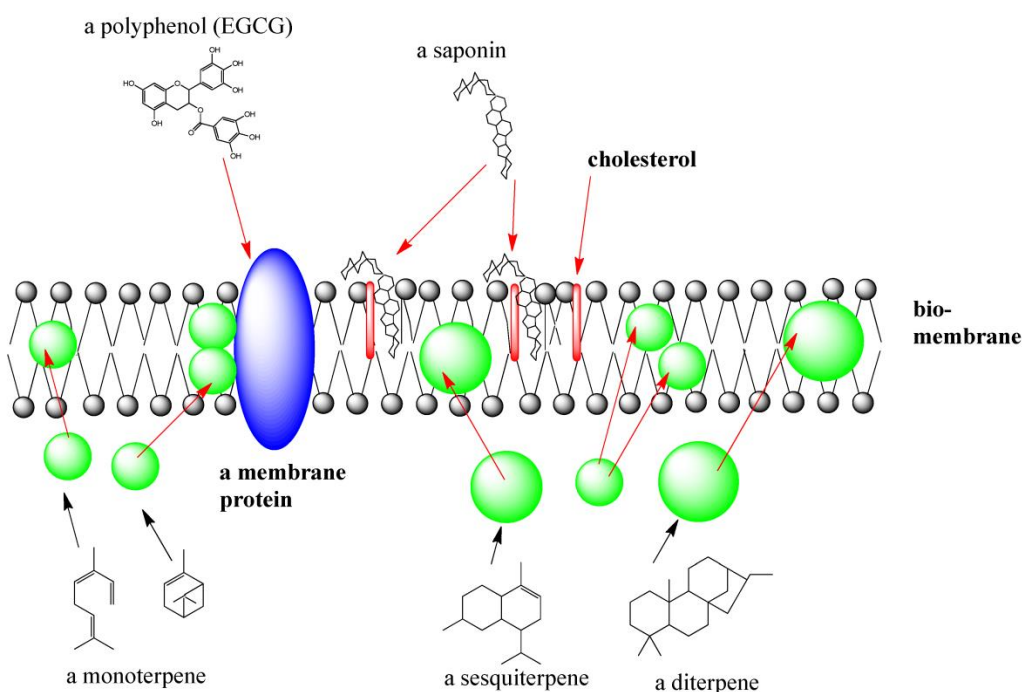


Figure 5: Mechanisms of Action of Herbal Remedies

YOGA AND MEDITATION

In this section, we explore the profound benefits of yoga and meditation for cardiovascular health, highlighting their role as integral components of Ayurvedic practice. We discuss the various elements of yoga, including physical postures (asanas), breathing techniques (pranayama), and meditation, and review scientific evidence supporting their efficacy in reducing blood pressure, improving cardiac function, and enhancing overall well-being. Furthermore, we emphasize the importance of integrating yoga and meditation into the management of hypertension and coronary artery disease (CAD) to complement pharmacological interventions and promote holistic healing.

Yoga: A Holistic Practice: Yoga is a holistic practice that encompasses physical, mental, and spiritual dimensions. It involves a combination of physical postures (asanas), breathing techniques (pranayama), and meditation, aimed at promoting harmony and balance within the body and mind. In Ayurveda, yoga is considered an essential component of a healthy lifestyle, with profound benefits for cardiovascular health.

Benefits of Yoga for Cardiovascular Health: Numerous studies have demonstrated the efficacy of yoga in improving cardiovascular health and reducing the risk factors associated with hypertension and CAD. Yoga practices such as asanas and pranayama have been shown to:

- **Lower Blood Pressure:** Yoga promotes relaxation and reduces sympathetic nervous system activity, leading to decreased blood pressure levels in individuals with hypertension.
- **Improve Cardiac Function:** Regular practice of yoga can enhance cardiac function by increasing cardiac output, improving heart rate variability, and enhancing endothelial function.
- **Reduce Stress and Anxiety:** Yoga and meditation techniques help alleviate stress, anxiety, and depression, which are known risk factors for cardiovascular diseases.
- **Enhance Overall Well-being:** Yoga fosters a sense of well-being, improves quality of life, and promotes healthy lifestyle behaviors, such as better dietary choices and increased physical activity.

Integration into Cardiovascular Care: Integrating yoga and meditation into the management of hypertension and CAD can complement pharmacological interventions and promote holistic healing. Healthcare providers can incorporate yoga-based interventions into comprehensive treatment plans for patients, offering them a holistic approach to managing their cardiovascular health.

Table 7: Benefits of Yoga for Cardiovascular Health

Benefit	Description
Lower Blood Pressure	Yoga promotes relaxation and reduces sympathetic nervous system activity, leading to decreased blood pressure levels.
Improve Cardiac Function	Regular practice of yoga enhances cardiac output, improves heart rate variability, and enhances endothelial function.
Reduce Stress and Anxiety	Yoga and meditation techniques help alleviate stress, anxiety, and depression, known risk factors for cardiovascular diseases.
Enhance Overall Well-being	Yoga fosters a sense of well-being, improves quality of life, and promotes healthy lifestyle behaviors.

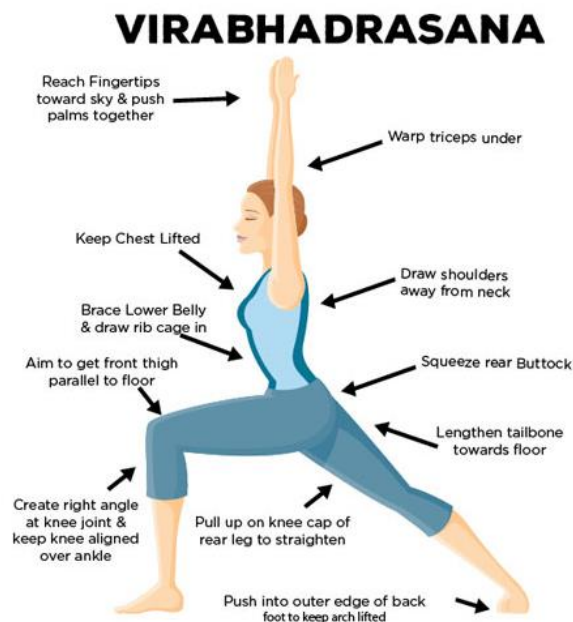


Figure 6: Yoga Practices for Cardiovascular Health

EVIDENCE-BASED APPROACHES AND CHALLENGES:

In this section, we delve into evidence-based approaches and challenges associated with integrating Ayurveda with modern cardiology. We discuss the promise of this integration, along with the need for addressing various challenges, such as standardization of Ayurvedic interventions, rigorous scientific evaluation through well-designed clinical trials, and ensuring compatibility with existing medical protocols. Furthermore, we emphasize the importance of collaborative efforts involving Ayurvedic practitioners, cardiologists, and researchers in developing evidence-based guidelines and optimizing patient care.

Promise of Integration: The integration of Ayurveda with modern cardiology holds promise for enhancing patient care and outcomes. Ayurvedic approaches offer holistic perspectives and therapeutic modalities that complement conventional cardiology, addressing the root causes of cardiovascular diseases and promoting overall well-being. By combining the strengths of both systems, patients may benefit from personalized and comprehensive treatment strategies tailored to their individual needs.

Challenges to Address: Despite the potential benefits, several challenges need to be addressed to facilitate the integration of Ayurveda with modern cardiology:

- **Standardization of Ayurvedic Interventions:** Ayurveda encompasses a vast array of interventions, ranging from herbal remedies and dietary recommendations to lifestyle modifications and therapeutic practices. Standardizing these interventions is essential to ensure consistency, reproducibility, and quality control in clinical practice and research.
- **Rigorous Scientific Evaluation:** While Ayurvedic interventions have been used for centuries, rigorous scientific evaluation through well-designed clinical trials is necessary to establish their safety, efficacy, and mechanisms of action. High-quality research studies are needed to generate robust evidence and validate Ayurvedic approaches in the context of cardiovascular health.
- **Compatibility with Existing Medical Protocols:** Integrating Ayurveda with modern cardiology requires careful consideration of compatibility with existing medical protocols and treatment guidelines. Collaborative efforts are needed to develop integrated care pathways that prioritize patient safety, optimize therapeutic outcomes, and respect patient preferences and cultural beliefs.

Collaborative Efforts and Evidence-Based Guidelines: Collaborative efforts involving Ayurvedic practitioners, cardiologists, researchers, and policymakers are essential for advancing the integration of Ayurveda with modern cardiology. By working together, stakeholders can develop evidence-based guidelines, clinical protocols, and educational resources that promote interdisciplinary collaboration, foster mutual respect, and improve patient care.

Table 8: Challenges and Solutions in Integrating Ayurveda with Modern Cardiology

Challenge	Solution
Standardization of Ayurvedic Interventions	Develop standardized protocols and quality control measures.
Rigorous Scientific Evaluation	Conduct well-designed clinical trials and research studies.
Compatibility with Existing Medical Protocols	Develop integrated care pathways and guidelines.

These collaborative efforts are crucial for harnessing the potential of Ayurveda in complementing modern cardiology and addressing the complex challenges posed by cardiovascular diseases. By fostering dialogue, sharing knowledge, and embracing interdisciplinary approaches, stakeholders can pave the way for a more holistic and patient-centered approach to cardiovascular care.

CONCLUSION

The conclusion of this paper highlights the significance of Ayurveda in providing a holistic framework for understanding and managing cardiovascular health, with a particular focus on conditions such as hypertension and coronary artery disease (CAD). By integrating Ayurvedic principles with modern medical practices, healthcare providers can offer comprehensive and personalized care to patients, addressing not only the symptoms but also the underlying imbalances contributing to cardiovascular diseases.

Ayurveda emphasizes the interconnectedness of mind, body, and spirit, viewing health as a state of balance and harmony. Through dietary and lifestyle modifications, herbal remedies,

yoga, and meditation, Ayurveda seeks to restore equilibrium within the body and promote overall well-being. Integrating these holistic approaches with modern cardiology enables healthcare providers to offer patients a more comprehensive and patient-centered approach to managing cardiovascular health.

The strength of an integrative approach lies in its ability to leverage the strengths of both Ayurveda and modern medicine, combining evidence-based interventions with traditional wisdom to optimize therapeutic outcomes. By embracing collaboration between Ayurvedic practitioners, cardiologists, researchers, and policymakers, we can develop evidence-based guidelines, clinical protocols, and educational resources that promote interdisciplinary collaboration and improve patient care.

In conclusion, by embracing an integrative approach that respects the strengths of both systems, we can enhance therapeutic outcomes, promote overall well-being, and pave the way for a more holistic and patient-centered approach to cardiovascular care.

REFERENCES

1. Sharma, H., Chandola, H. M., & Singh, G. (2015). Basisht: A historical perspective. *Journal of Ayurveda and Integrative Medicine*, 6(1), 2–8.
2. Manchanda, S. C., Narang, R., Reddy, K. S., Sachdeva, U., & Prabhakaran, D. (2015). The Indian paradox: Heart failure with preserved left ventricular function in Indians. *World Journal of Cardiology*, 7(4), 201–206.
3. Vyas, H. A., & Das, S. (2016). Cardiovascular diseases in Ayurveda - A Review. *Journal of Biomedical and Pharmaceutical Research*, 5(4), 34-37.
4. Sharma, R. K., & Dash, B. (2014). Concept of high blood pressure in Ayurveda. *Ayurpharm International Journal of Ayurveda and Allied Sciences*, 3(6), 66-69.
5. Kshirsagar, A. D., & Mohite, P. (2018). Role of Ayurveda in Cardiovascular Diseases. *International Journal of Ayurveda and Pharma Research*, 6(5), 20-22.
6. Dharmarajan, R. (2017). An Insight into the Modern and Ayurvedic Aspect of Coronary Artery Disease (CAD): A Review. *Journal of Ayurveda and Integrated Medical Sciences*, 2(4), 234-237.

7. Tiwari, R., Tripathi, P. K., & Shrivastava, V. (2015). Role of Ayurvedic Herbs in the Management of Hypertension: A Review. *International Journal of Pharmaceutical Sciences and Research*, 6(6), 2223-2228.
8. Shrivastava, A., Mishra, A., & Soni, S. (2019). Ayurvedic herbs in the management of hypertension: a comprehensive review. *Journal of Ayurveda and Integrative Medicine*, 10(3), 209-213.
9. Venkatadri, R., & Chatterjee, A. (2018). Herbal drugs and phytopharmaceuticals for hypertension: from traditional medicine to evidence-based therapeutics. *Natural Product Reports*, 35(6), 648-675.
10. Javadi, B., & Sahebkar, A. (2017). Natural products with anti-inflammatory and immunomodulatory activities against atherosclerosis: a review of the literature. *Current Pharmaceutical Design*, 23(7), 1016-1025.
11. Singh, R. H., Narsimhamurthy, K., & Singh, G. (2017). Neurological disorders and management in Ayurveda: Perspective of Charaka Samhita. *Journal of Ethnopharmacology*, 197, 46-49.
12. Telles, S., Sharma, S. K., Yadav, A., & Singh, N. (2014). Role of yoga and naturopathy in the management of hypertension. *Complementary Therapies in Clinical Practice*, 20(3), 154-157.
13. Chu, P., Pandey, A., Mishra, S., & Varma, K. (2018). Yoga as a Therapeutic Intervention for the Management of Hypertension. *International Journal of Preventive Medicine*, 9, 63.
14. Tyagi, A., Cohen, M., & Reece, J. (2014). Yoga and hypertension: a systematic review. *Alternative Therapies in Health and Medicine*, 20(2), 32-59.
15. Schneider, R. H., & Grim, C. E. (2014). Yoga for hypertension: a systematic review of randomized clinical trials. *Current Cardiology Reviews*, 10(4), 269-278.
16. Telles, S., Sharma, S. K., Yadav, A., & Singh, N. (2014). Role of yoga and naturopathy in the management of hypertension. *Complementary Therapies in Clinical Practice*, 20(3), 154-157.
17. Trousselard, M., Steiler, D., Dutheil, F., Claverie, D., Canini, F., Fenouillet, F., ... & Navel, V. (2015). Validation of the 4DSQ somatization subscale in the French working population. *Journal of Psychosomatic Research*, 79(2), 150-157.

18. Wang, Z., & Wang, J. (2016). Impact of meditation on resting state brain function: A systematic review and meta-analysis of functional magnetic resonance imaging studies. *Neuroscience & Biobehavioral Reviews*, 65, 1-11.