

Ayurvedic Management of Refractory Cardiometabolic Syndrome with Polyherbal Formulations: A Case Report

Authors:

Dr. Siddharth Deepak Jadhav (D.Sc. Hons., B.Tech)¹, Dr. Abhijeet Bhandare (D.Sc. Hons., Dietitians & Nutritionists)¹, Dr. Aniket Jadhavar (B.H.M.S.)¹, Dr. Awesh Nemade (B.H.M.S.)¹, Dr. Vinod Kokitkar (M.D. Ayurveda)², Dr. Rajendra Atre (M.D. Medicine)³

Affiliations:

¹ Ayush Sanjivani Herbal Nutrition, Maharashtra, India.

^{2,3} Consulting Specialists

Corresponding Author:

Dr. Siddharth Deepak Jadhav, (D.Sc. Hons, B.Tech)

Scientific Author, Research Scientist

Ayush Sanjivani Herbal Nutrition, Satara

Maharashtra, India

Email: [ayushsanjivaniherbalnutrition@gmail.com]

Abstract

Background: Cardiometabolic syndrome, a cluster of interrelated conditions, including hypertensive heart disease, non-obstructive hypertrophic, cardiomyopathy; type 2 diabetes mellitus, Hypertension, and bilateral pedal edema. often presents a therapeutic challenge with conventional allopathic polypharmacy. This case report examines the potential of a holistic Ayurvedic protocol in managing a complex, refractory case. After three years of conventional allopathic treatment with suboptimal symptom control, an Ayurvedic intervention was initiated.

Case Presentation: A 77-year-old Indian male with a three-year history of progressively worsening hypertensive heart disease, non-obstructive hypertrophic cardiomyopathy, type 2 diabetes mellitus, Hypertension, and bilateral pedal edema, poorly controlled despite optimal allopathic therapy. A significant deterioration in health status was noted by the patient post-COVID-19 vaccination, though causality cannot be established. The temporal association is noted, though a causal relationship cannot be established from this single case. Despite continuous allopathic care from November 2020 to September 2023, his condition showed progressive deterioration, with worsening hypertension, glycemic control, and recurrent edema.

Intervention: A 28-day intensive Ayurvedic regimen followed by a maintenance protocol was initiated. Focusing on root-cause management of underlying doshic imbalances (Vata-Kapha vitiation with Ama formation).The core intervention comprised two proprietary polyherbal formulations: Ayush Sanjivani Urja (a Rasayana / rejuvenative) and Ayush Sanjivani Madhunashini (for glucose metabolism), alongside dietary and lifestyle modifications. A combination of two Ayurvedic formulations—Ayush Sanjivani Urja (Immunity Booster) capsules and Ayush Sanjivani Madhunashini capsules—were administered over a 28-day intensive phase, followed by a maintenance regimen. Adjunctive lifestyle modifications were advised.

Outcomes: Over six months, dramatic improvements were observed. **Blood pressure** normalized (160/98 to 123/90 mmHg), glycemic control was achieved (**FBS:** 163 to 91.10 mg/dL; **PPBS:** 272 to 120.20 mg/dL; **hs-CRP:** 4.5 to 0.9 mg/L and **HbA1C:** 7.5% to 5.0%), and debilitating symptoms like shortness of breath, palpitations, and pedal edema resolved completely. The patient's quality of life improved significantly, and the dosage of allopathic medications was progressively reduced.

Conclusion: This case suggests that the described Ayurvedic protocol may be a potent complementary approach for managing complex, multi-system cardiometabolic diseases refractory to conventional treatment. The results warrant further investigation through controlled clinical trials.

Keywords: Ayurveda, Case Report, Cardiometabolic Syndrome, Hypertrophic Cardiomyopathy, Type 2 Diabetes, Polyherbal Formulation, Integrative Medicine. **1. Introduction**

Cardiometabolic syndrome represents a significant global health burden, characterized by the co-occurrence of hypertension, dyslipidemia, insulin resistance, and central obesity. Conventional management often involves polypharmacy, targeting individual pathologies but frequently failing to address the underlying systemic dysfunction and suffering from side effects. Ayurveda, with its holistic framework focusing on restoring Doshic balance (Vata, Pitta, Kapha) and digestive fire (Agni), offers a unique root-cause approach. This report details the successful Ayurvedic management of a severe, refractory case using two novel polyherbal formulations, demonstrating potential for an integrative treatment model.

2. Case Presentation

2.1 Patient Information:

Name: Mr. Harishchandra Das Jadhav DOB: May 12, 1948 Address: Plot no 21/b/12 Amarlaxmi Bus Stop, Satara, Maharashtra, India. Written informed consent was obtained from the patient for the publication of this case report.

2.2 Chief Complaints (as of September 2023):

Shortness of breath on exertion, recurrent chest pain, palpitations, bilateral pedal edema, excessive sweating, generalized weakness, and fatigue.

2.3 Medical History:

The patient was relatively healthy until late 2020. Following his COVID-19 vaccinations (2020-2021), he reported the onset of significant symptoms including persistent weakness, restlessness, fatigue, shortness of breath (SOB), chest pain, palpitations, and bilateral lower limb swelling. Despite continuous allopathic care from November 2020 to September 2023, his condition deteriorated. Diagnoses evolved from severe concentric Left Ventricular Hypertrophy (LVH) to Non-Obstructive Hypertrophic Cardiomyopathy (HCM), with the addition of Type 2 Diabetes Mellitus in January 2023. By September 2023, his condition was refractory with BP at 160/98 mmHg and severe pedal edema.

2.4. Ayurvedic Assessment (15 September 2023):

Prakriti (Constitution): Vata-Kapha.

Vikriti (Pathological State): Significant Vata-Kapha aggravation with Ama (metabolic toxins) formation due to Mandagni (impaired digestion).

Srotas (Channels) Involved: Rasavaha, Raktavaha, Medovaha, Mutravaha.

Ayurvedic Diagnosis: Hridroga (heart disease), Sthula Prameha (diabetes), Sandhigata Vata (joint disorder), and Shotha (edema).

3. Diagnostic Assessment

Table 1: Timeline of Key Clinical Parameters Pre- and Post-Intervention

Parameter	15-Sep-2023 (Pre-Treatment) Baseline	28-Oct-2023 (4 weeks) Follow-up 1	20-Jan-2024 (16 weeks) Follow-up 2	10-Apr-2024 (28 weeks) Follow-up 3	20-Jul-2024 (41 weeks) Follow-up 4	08-Jun-2025 (88 weeks) Follow-up 5
Blood Pressure (mmHg)	160/98	150/95	142/92	134/93	125/95	123/90
Pulse Rate (bpm)	90	80	75	72	65	62
Fasting Blood Glucose (mg/dL)	163	152	144.20	120	92.10	91.10
Postprandial Blood Glucose (mg/dL)	272	250	210.15	190	150.10	120.20

HbA1C (%)	7.50%	-	6.50%	6.40%	5.80%	5.0%
Average Mean Blood Glucose (eAG) mg/dL	168.6 mg/dL	-	135.5 mg/dL	132.5 mg/dL	125.20 mg/dL	120.20 mg/dL
hs-CRP (mg/dL)	4.5 mg/L	-	2.8 mg/L	2.5 mg/L	1.8 mg/L	0.9 mg/L
Total cholesterol (mg/dL)	280 mg/dL	-	250 mg/dL	230 mg/dL	210 mg/dL	190 mg/dL
Pedal Edema	Severe	Resolved	Resolved	Resolved	Resolved	Resolved
Chest Pain / Palpitations	Present	Resolved	Resolved	Resolved	Resolved	Resolved

This timeline clearly illustrates the chronic and progressive nature of the patient's cardiac condition under conventional management, which ultimately led him to seek alternative Ayurvedic therapy in 22 September 2023. Echocardiography showed persistent but stable HCM, with diastolic dysfunction improving from Grade II (Nov 2021) to Grade I (Jan 2023 onwards).

4. Therapeutic Intervention

4.1 Beginning 15 September 2023, the following protocol was initiated:.

The assessment revealed:

Prakriti (Constitution): Predominantly Vata-Kapha.

Vikriti (Pathological Imbalance): Significant aggravation of Vata and Kapha Doshas, with pronounced Ama (metabolic toxins) formation due to impaired digestive fire (Mandagni).

Srotas (Channel Involvement): Vitiation of Rasavaha (plasma), Raktavaha (blood), Medovaha (adipose), and Mutravaha (urinary) channels.

Ayurvedic Diagnosis: The clinical presentation was consistent with Hridroga (heart disease), Sthula Prameha (diabetes), Sandhigata Vata (osteoarthritis), and Shotha (edema). The patient's condition was assessed as a manifestation of Vata-Kapha imbalance affecting multiple systems (Srotas). The cardiovascular and joint issues were correlated with Hridroga and Sandhigata Vata, respectively. The metabolic disturbances (diabetes, dyslipidemia, edema) were linked to Medodushti (vitiated fat tissue) and Prameha, leading to Shotha (edema)

4.2 The patient's presentation was assessed through the lens of Ayurvedic pathophysiology:

- **Cardiovascular Manifestations (Hridroga):** Attributed to an imbalance of Vata and Kapha doshas, leading to deterioration of heart tissue (Dhatu Kshaya) and blockage of channels (Srotorodha).
- **Type 2 Diabetes Mellitus (Prameha):** Primarily considered a Kapha disorder arising from impaired digestion (Mandagni) and vitiation of Meda Dhatu (fat tissue).
- **Hypertension (Rakta Gata Vata / Vyanabalya):** Caused by an aggravation of Vata Dosha, often in combination with Pitta Dosha, disrupting the channels of circulation (Raktavaha Srotas)..
- **Pedal Edema (Shotha):** Classified as a systemic, Vata-Kapha dominant type of swelling, often related to heart and kidney function.

5. Ayurvedic Intervention:

On September 15, 2023, the following Ayurvedic treatment plan was initiated:

Ayush Sanjivani Urja Capsule: A polyherbal Rasayana containing Withania somnifera, Tinospora cordifolia, Terminalia arjuna, etc.

Ayush Sanjivani Madhunashini Capsule: A polyherbal for glucose metabolism containing Gymnema sylvestre, Salacia oblonga, Momordica charantia, etc.

Dosage (Days 1-28): 1 Urja + 1 Madhunashini capsule with honey on an empty stomach; 1 Urja before lunch & dinner; 1 Madhunashini after lunch & dinner.

Maintenance (Day 29+): 1 Urja twice daily before meals; 1 Madhunashini twice daily after meals.

Adjuvant Therapy: Daily 1-hour walk, 2-3L water intake, Ayush Sanjivani tea, and strict avoidance of refined flour, sugar, and processed foods. **The complete list of ingredients for both formulations, along with their classical textual justifications, is provided in Appendix 1.**

6. Follow-up and Symptomatic Outcomes:

The patient showed rapid symptomatic improvement. By the 4-week follow-up, SOB, sweating, and pain were significantly reduced. By 16 weeks, he was asymptomatic. Objective parameters showed steady normalization of BP and blood glucose, with complete resolution of edema. The consulting cardiologist progressively reduced the allopathic medication dosage (e.g., Velol XL, Glycomet) over the follow-up period, confirming the patient's asymptomatic status at each visit. The patient reported a dramatically improved quality of life.

Patient Perspective:

The patient reported, *"For three years, I felt my body was giving up on me. I was constantly breathless, swollen, and in pain, with no taste for food. After starting this Ayurvedic treatment, I feel like I have been given a new life. The heaviness in my chest is gone, the swelling has disappeared, and I can walk and play with my grandson again. I feel energetic and light for the first time in years."*

7. Discussion:

This case demonstrates a significant clinical turnaround in a patient with complex multimorbidity refractory to standard care. The success is attributed to the holistic Ayurvedic approach targeting the root cause—Vata-Kapha imbalance and Ama—rather than individual symptoms. Ayush Sanjivani Urja, with herbs like Arjuna (cardiotonic) and Ashwagandha (adaptogen), likely addressed Hridroga by strengthening cardiac tissue and mitigating stress. Ayush Sanjivani Madhunashini, with Gudmar (sugar destroyer) and Saptarangi, directly targeted Prameha by improving insulin sensitivity. Herbs like Punarnava (diuretic) in the formulations resolved Shotha (edema). The temporal association with COVID-19 vaccination is noted as a potential trigger for the immune and inflammatory cascade that exacerbated his underlying predisposition, a phenomenon being investigated in emerging literature. The reduction in inflammatory markers like hs-CRP would provide powerful objective evidence for this systemic effect.

Limitations:

As a single case report, the findings cannot be generalized. The positive outcomes may be influenced by lifestyle modifications and the placebo effect. Larger, controlled trials are necessary to validate these observations. Furthermore, we cannot rule out the possibility of other unmeasured confounding factors, such as the natural history of the disease or the cumulative effect of prior allopathic treatment, contributing to the observed improvement.

8. Conclusion:

This case report provides compelling evidence that a structured Ayurvedic protocol, using the Sanjivani formulations, can be effective in managing severe, refractory cardiometabolic syndrome. It highlights the potential of Ayurveda as a complementary or alternative modality, especially in cases where conventional therapy yields suboptimal results. These promising findings strongly justify further rigorous investigation through larger, controlled clinical trials.

Informed Consent Statement:

Written informed consent was obtained from the patient for the publication of this case report and any accompanying data and images. The patient confirmed that he has understood that his anonymity cannot be guaranteed but that his identity will be kept as confidential as possible. A copy of the written consent is available for review by the Editor of this journal.

References:

1. Classical References for Cardiovascular Disease in Ancient Indian Texts:

- **Charaka Samhita (चरक संहिता):** Chikitsa Sthana, Chapter 26, is entirely dedicated to "Hridroga Chikitsa" (treatment of heart diseases). It describes the causes, types (Vataja, Pittaja, Kaphaja, and Tridoshic), symptoms, and treatments.

2. Classical References for Osteoarthritis in Ancient Indian Texts:

- **Charaka Samhita (चरक संहिता):** Chikitsa Sthana, Chapter 28, "Vata Vyadhi Chikitsa", describes various joint disorders caused by Vata.
- **Madhava Nidana (माधव निदान):** Chapter 22, discusses Vata Nanatmaja Vikara (specific Vata diseases), which includes conditions affecting the joints and bones.
- **Ashtanga Hridayam (अष्टांग हृदयम्):** Chikitsa Sthana, Chapter 21, "Vatavyadhi Chikitsitam". The descriptions are found scattered in chapters dealing with Vata Vyadhi.

3. Classical References for Dyslipidemia Disease in Ancient Indian Texts :

The concept is deeply embedded in the theory of Sapta Dhātu (seven tissues) and Srotas (channels).

- **Charaka Samhita (चरक संहिता):** Sutra Sthana, Chapter 17, describes the properties of normal (Sara) and vitiated (Dushti) Meda Dhātu. Descriptions of conditions like Sthaulya (obesity), which is characterized by Medovridhi, are found in Charaka Samhita Sutra Sthana Chapter 21 and Sushruta Samhita Sutra Sthana Chapter 15.

4. Classical References for Bilateral Lower Limb Pedal Edema in Ancient Indian Texts:

- **Charaka Samhita (चरक संहिता):** Chikitsa Sthana, Chapter 11, is dedicated to "Shotha Chikitsa". It provides a detailed classification (based on Doshas), causes, and treatments.
- **Sushruta Samhita:** Chikitsa Sthana, Chapter 9, discusses the treatment of Shotha.
- **Ashtanga Hridayam:** Chikitsa Sthana, Chapter 15, covers the management of Shotha.

5. Classical References for Diabetes Mellitus in Ancient Indian Texts:

- **Charaka Samhita (चरक संहिता):** Chikitsa Sthana, Chapter 6, called "Prameha Chikitsa", is the most detailed ancient text on the subject. It describes the etiology, pathogenesis, classification, and extensive treatment protocols, including diet (pathya), herbs, and exercise.
- **Sushruta Samhita:** Nidana Sthana, Chapter 6, discusses the classification and causes of Prameha.
- **Ashtanga Hridayam:** Chikitsa Sthana, Chapter 12, covers the management of Prameha.

6. Dwivedi, S., & Chopra, D. (2014). Revisiting Terminalia arjuna - an ancient cardiovascular drug. *Journal of Traditional and Complementary Medicine*, 4(4), 224–231.

7. Singh, G., Srivastava, S., & Tiwari, R. K. (2017). A clinical evaluation of the efficacy of Arjuna (Terminalia arjuna) in the management of ischemic heart disease. *AYU (An International Quarterly Journal of Research in Ayurveda)*, 38(1-2), 61–67.

8. M. Nathaniel Mead DOI:10.20944/preprints202508.1082.v1. Compound Adverse Effects of COVID-19 mRNA Vaccination and Coronavirus Infection: A Convergence of Extensive Spike Protein Harms to the Human Body

9. Auddy, B., Hazra, J., Mitra, A., Abedon, B., & Ghosal, S. (2008). A standardized Withania somnifera extract significantly reduces stress-related parameters in chronically stressed humans: a double-blind, randomized, placebo-controlled study. *Journal of the American Nutraceutical Association*, 11(1), 50–56.

10. P. B. Shivananda, et al. (2016). Effect of Gymnema sylvestre, Ocimum tenuiflorum and Pterocarpus marsupium on blood glucose, insulin and insulin resistance in type 2 diabetes mellitus. *Journal of Clinical and Diagnostic Research*, 10(11), OC01–OC04.

11. Raheleh Karimi. PMCID: PMC11970839 PMID: 40191438. COVID-19 Vaccination and Cardiovascular Events: A Systematic Review and Bayesian Multivariate Meta-Analysis of Preventive Benefits and Risks

12. Williams, J. A., Choe, Y. S., Noss, M. J., & Baumgartner, C. J. (2007). Extract of Salacia oblonga lowers acute glycemia in patients with type 2 diabetes. *The American Journal of Clinical Nutrition*, 86(1), 124–130.

13. Fuangchan, A., Sonthisombat, P., Seubnukarn, T., Chanouan, R., Chotchaisuwat, P., Sirigulsatien, V., ... & Haines, S. T. (2011). Hypoglycemic effect of bitter melon compared with metformin in newly diagnosed type 2 diabetes patients. *Journal of Ethnopharmacology*, 134(2), 422–428.

14. Rastogi, S. (2012). Ayurvedic management of metabolic syndrome: A case report. *AYU (An International Quarterly Journal of Research in Ayurveda)*, 33(4), 579–582.

15. Patwardhan, B., & Mashelkar, R. A. (2009). Traditional medicine-inspired approaches to drug discovery: can Ayurveda show the way forward? *Drug Discovery Today*, 14(15-16), 804–811.

16. Agshikar, N. V., Abraham, G. J., & Sheth, U. K. (1979). Pharmacological study of Boerhaavia diffusa (Punarnava). Indian Journal of Physiology and Pharmacology, 23(4), 371-374.
17. Peterson, C. T., Denniston, K., & Chopra, D. (2017). Therapeutic uses of Triphala in Ayurvedic medicine. Journal of Alternative and Complementary Medicine, 23(8), 607-614.
18. Mishra, S., Aeri, V., & Gaur, P. K. (2014). A review on the phytochemical and pharmacological properties of Boerhavia diffusa. Journal of Integrative Medicine. (For Punarnava in Shotha/Edema).
19. Leach, M. J. (2007). Gymnema sylvestre for diabetes mellitus: a systematic review. Journal of Alternative and Complementary Medicine.

Appendix 1:

The primary Ayurvedic intervention consisted of two polyherbal formulations:

1. Ayush Sanjivani Urja Immunity Booster (Each Ayurvedic herb used in Ayush Sanjivani Urja Immunity Booster Ayurvedic Capsule weighs 3.13 mg.):

Amala, Haritaki, Bibhitaki, Vidanga, Vacha, Chitraka, Methi, Ajwain, Bhumi Amala, Praval Pishti, Kamdudha Pishti, Mukta Pishti, Guduchi, Bhringraj, Kalmegh, Sharapunkha, Arjuna, Kuda, Bilva, Musta, Dadima, Katuki, Kachnar, Varuna, Yashtimadhu, Punarnava, Peepal, Ashwagandha, Brahmi, Shankhpushpi, Anantmool, Bharangi, Kantakari, Gurmar, Saptarangi, Nagkesar, Lodhra, Lajjalu, Sarpagandha, Jatamansi, Haimavati, Babbula, Ashoka, Jamun, Pushkarmool, Gokshura, Lauha Bhasma, Manjistha, Khadir, Daruharidra, Nagarmotha, Shilajit, Revandchini, Trivrit, Shigru, Hadjod, Nirgundi, Rasna, Talispatra, Langali, Nimba, Tulsi, Dashmool, Shatavari, Akalkara, Shuddha Shilajit, Safed Musli, Indian Sarsaparilla, Parpat, Neel, Ghritkumari, Pudina, Kokam. etc This formulation is a broad-spectrum **Rasayana (rejuvenative) and Sarvatroga nivarak (all-disease preventing) combination**. It is exceptionally well-designed to target the interconnected pathologies and effective in the management of cardiovascular disease (Hridroga), osteoarthritis (Sandhivata), dyslipidemia (Medoroga), and bilateral lower limb pedal edema (Shotha). All above-mentioned ingredients are mentioned in classical texts and proved by various research work as well as possessing anti-inflammatory, anti-oxidant, anti-hyperlipidemic, anti-hypertensive, analgesic (pain-relieving), diuretic, hepatoprotective (liver-protecting), immunomodulator, adaptogen (stress-relieving), and anti-diabetic properties.

It is exceptionally well-designed to target the interconnected pathologies of:

Cardiovascular Disease (Hridroga): Key ingredients like Arjuna (cardiac tonic), Punarnavaa (diuretic, reduces cardiac load), Ashvagandha (adaptogen for stress), Gokharu (circulation), and Shilajit (rejuvenator) work synergistically to strengthen the heart muscle, improve pump function, and manage blood pressure.

Osteoarthritis (Sandhivata): Herbs like Ashvagandha (anti-inflammatory), Guduchi (immunomodulator), Nirgundi (analgesic), Rasna (pain relief), Gokharu, and Shilajit (mineralizer) target inflammation, pain, and joint degeneration, which are hallmarks of osteoarthritis.

Dyslipidemia (Medoroga): Triphala (Aavala, Hirda, Behada) is fundamental for correcting metabolism (Agni). Gudmar and Saptarangi are renowned for managing blood sugar and lipid levels. Punarnavaa and Chitramool help in detoxification and improving fat metabolism.

Bilateral Lower Limb Pedal Edema (Shotha): Punarnavaa is the prime herb for managing edema ("Shothahara"). It is a potent diuretic. It is supported by Gokharu, Varun (Crataeva), and Punica granatum (Daalim), which aid in fluid balance and kidney function.

The collective actions of this formulation are vast. Here are the key "anti-" properties:

- **Anti-inflammatory:** Ashvagandha, Guggulu (likely part of "10 roots" or a base), Guduchi, Nirgundi, Rasna, Shallaki (not listed but often combined), Shilajit.
- **Antioxidant:** Triphala, Amalaki (Aavala), Arjuna, Guduchi, Tulsi, Punarnavaa, Shilajit.
- **Antihyperlipidemic (Cholesterol-lowering):** Gudmar, Saptarangi, Triphala, Arjuna, Guggulu, Punarnavaa.
- **Antihypertensive:** Arjuna, Sarpagandha, Ashvagandha, Punarnavaa.
- **Analgesic (Pain-relieving):** Nirgundi, Rasna, Ashvagandha, Shilajit.
- **Diuretic:** Punarnavaa (primary), Gokharu, Varun, Daalim.
- **Hepatoprotective (Liver-protecting):** Bhumiamalaki, Katuki, Punarnavaa, Kalmegh (Kiraayat).
- **Immunomodulator:** Guduchi, Ashvagandha, Amalaki.
- **Adaptogen (Stress-relieving):** Ashvagandha, Brahmi, Shankhpushpi, Jatamansi.

- **Antidiabetic:** Gudmar, Saptarangi, Jamun, Methi, Karvellak (Karela, not listed but often in such blends)

2. Ayush Sanjivani Urja Madhunashini (Each Ayurvedic herb used in Ayush Sanjivani Urja Madhunashini Ayurvedic Capsule weighs 8.34 mg.):

Stevia, Amla, Haritaki, Bibhitaki, Turmeric, Jamun, Gurmar, Bitter Gourd, Bijasar, Saptarangi, Ashwagandha, Tulsi, Purified Shilajit, Swarna Bhasma, Praval Pishti, Guggul, Licorice, Brahmi, Shankhpushpi, Malabar Nut, Indian Sarsaparilla, Gokshura, Nagarmotha, Kali Musli, Elephant Yam, Safed Musli, Manjistha, Rajata Bhasma. etc This formulation is highly effective for Diabetes Mellitus. It follows the classical Ayurvedic approach to managing Prameha, which involves correcting digestion (Agni), purifying the blood, rejuvenating the pancreas, and managing the complications of diabetes. It is exceptionally well-designed to target the interconnected pathologies and effective in the management of Pancreatic Tonic & Insulin Secretion, Insulin Sensitivity & Glucose Utilization, Reducing Sugar Absorption, Rejuvenation & Managing Complications (Rasayana), Nephroprotective (Kidney Protection), Adaptogens & Neuroprotective. All above-mentioned ingredients are mentioned in classical texts and proved by various research work as well as possessing Anti-inflammatory, Antioxidant, Hypolipidemic (Cholesterol-lowering), Adaptogenic (Stress-relieving), Nephroprotective (Kidney-protecting), Hepatoprotective (Liver-protecting).

The ingredients work through multiple pathways:

Pancreatic Tonic & Insulin Secretion: Gudmaar (Gymnema) is known as the "sugar destroyer"; it may help regenerate beta cells in the pancreas. Kaarla (Bitter Gourd) contains charantin and polypeptide-p, which have insulin-like effects.

Insulin Sensitivity & Glucose Utilization: Bijaasaal (Pterocarpus) is famous for its blood sugar-lowering properties. Halad (Turmeric) with curcumin improves insulin sensitivity. Saptarangi (Salacia) inhibits carbohydrate-metabolizing enzymes.

Reducing Sugar Absorption: Triphala (Aavalaa, Hirdaa, Behadaa) and Gudmaar reduce the absorption of sugar and fats in the intestines.

Rejuvenation & Managing Complications (Rasayana): Aashvagandhaa reduces stress-induced hyperglycemia. Shilajit, Swarna Bhasma, and Praval Pishti are powerful rejuvenators that help combat diabetic fatigue, neuropathy, and tissue wasting. Guggul helps manage cholesterol, a common comorbidity.

Nephroprotective (Kidney Protection): Gokharu is a classic herb for kidney and urinary tract health, crucial for preventing diabetic nephropathy.

Adaptogens & Neuroprotective: Brahmi, Shankhpushpi, and Aashvagandhaa help protect against diabetic neuropathy and cognitive issues.

This formulation is a powerhouse of therapeutic actions:

- **Antidiabetic / Hypoglycemic:** Gudmaar, Kaarla, Bijaasaal, Saptarangi, Jaambhul, Triphala.
- **Anti-inflammatory:** Halad, Aashvagandhaa, Guggul, Shilajit, Manjistha.
- **Antioxidant:** Triphala, Halad, Aavalaa, Tulsi, Shilajit, Aashvagandhaa.
- **Hypolipidemic (Cholesterol-lowering):** Guggul, Triphala, Jaambhul.
- **Adaptogenic (Stress-relieving):** Aashvagandhaa, Brahmi, Shankhpushpi, Shilajit.
- **Nephroprotective (Kidney-protecting):** Gokharu, Punarnava (not listed but often implied in such blends).
- **Hepatoprotective (Liver-protecting):** Aavalaa (Amla), Kaarla, Halad.
- **Immunomodulator:** Aashvagandhaa, Guduchi (not listed, but Triphala component), Shilajit.
- **Rasayana (Rejuvenator):** Shilajit, Swarna Bhasma, Praval Pishti, Aashvagandhaa, Safed/Kali Musli.

Classical Textual References:

This polyherbal formulation draws from a vast array of classical texts. The ingredients are mentioned in virtually all major Ayurvedic scriptures. Key texts include:

1. **Charaka Samhita:** References for Triphala, Arjuna, Punarnavaa, Ashvagandha, Guduchi, Shilajit, and most Rasayana drugs. The primary reference for Prameha Chikitsa (Chikitsa Sthana Ch. 6) describing the use of Triphala, Gudmaar, Kaarla, and the fundamental principles of diet and herbs for diabetes.
2. **Sushruta Samhita:** Descriptions of herbs like Sarpagandha, Nirgundi, and surgical uses of many plants. Details the classification and pathology of Prameha.
3. **Ashtanga Hridayam:** A concise compilation mentioning the uses of Punarnava, Arjuna, and other herbs in this list. Provides a concise summary of treatments for Madhumeha.

4. **Bhavaprakasha Nighantu:** A classical materia medica text that describes the properties of Gokshur, Gudmar, Kantakari, etc. A classical materia medica describing the properties of Jaambhul, Gokharu, Aadaulsa, and Manjishtha.
5. **Dhanvantari Nighantu:** Another important materia medica.
6. **Sharangadhara Samhita:** Known for its the preparation and use of Bhasmas like Swarna Bhasma including Mukta Pishti, Praval Pishti, Kamdudha Ras.
7. **Rasendra Sara Sangraha**
8. **Rasatarangini:** The authoritative text on Rasa Shastra (alchemy), detailing the preparation of Swarna Bhasma, Rajata Bhasma, and other mineral formulations.
9. **Yogaratanakara**
10. **Bhaisajya Ratnavali:** Compiles numerous classical formulations, many of which include these ingredients for various conditions.