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REVIEWER'S REPORT

Manuscript No.: JNHM-118

Title: Comprehensive Diabetic Care Program Reduces Glycemic Burden and Cardiovascular Risk Markers in Type 2 Diabetes: A Retrospective Cohort Study,

Recommendation:
Accept after minor revision.....

Rating	Excel.	Good	Fair	Poor
Originality			✔	
Techn. Quality			✔	
Clarity		✔		
Significance	✔			

Reviewer's ID: JPR-Bilqees Hamza

Detailed Reviewer's Report

Overview

The retrospective pre-post cohort study titled "Comprehensive Diabetic Care Program Reduces Glycemic Burden and Cardiovascular Risk Markers in Type 2 Diabetes: A Retrospective Cohort Study" evaluates the therapeutic efficacy of a structured, multimodal Ayurvedic intervention framework for the management of Type 2 Diabetes Mellitus (T2DM). Conducted between April 2025 and March 2026 at a semi-rural Madhavbaug clinic in the Marathwada region (Ahmednagar district) of Maharashtra, India, the study analyzes a cohort of 32 patients (23 male, 9 female; mean age 46.1 ± 13.3 years). This research offers valuable clinical insight into treating a semi-rural demographic, whose lifestyle and environmental factors diverge significantly from previously studied urban cohorts, by simultaneously addressing hyperglycemia and associated cardiovascular risk factors.

Methodologically, the Comprehensive Diabetic Care (CDC) program operationalizes the classical Ayurvedic framework of *Prameha* (characterized by an excess of *Kapha* and *Medas*) through a strict, multi-component five-month protocol. Participants underwent substantial caloric restriction (~800 kcal/day via the low-carbohydrate *Prameha* diet) alongside structured daily yoga and pranayama practices designed to enhance muscle insulin sensitivity and autonomic regulation. This was combined with a mean of 10.3 ± 3.6 procedural Panchakarma sessions consisting of centripetal oleation (*Abhyanga*) using *Neem Siddha Taila*, thermal vasodilation (*Swedana*) via *Dashmula Kwath*, and per-rectal drug administration (*Basti*) delivering localized, pharmacologically active phytochemicals like gymnemic acids, glycyrrhizin, and curcuminoids. Statistical significance was determined using paired

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two-tailed t-tests, while Pearson correlation coefficients quantified the relationship between actual sessions completed and primary outcomes.

The documented results demonstrate robust, statistically significant improvements across all measured cardiometabolic, anthropometric, and autonomic domains. Mean glycated hemoglobin (HbA_{1c}) fell significantly from $8.67 \pm 2.28\%$ to $7.47 \pm 1.68\%$ ($p<0.001$), with 50% of the cohort successfully achieving the standard therapeutic target of $\text{HbA}_{1c} < 7.0\%$. Fasting blood glucose decreased by a mean of 59.9 mg/dL ($p=0.001$). For anthropometric metrics, body weight declined by 4.28 kg ($p<0.0001$), BMI dropped by 1.52 kg/m^2 ($p<0.0001$), and abdominal girth decreased by 4.73 cm ($p<0.0001$). Hemodynamic load was also markedly reduced, with systolic blood pressure dropping by 7.16 mmHg ($p=0.011$), diastolic blood pressure by 6.45 mmHg ($p=0.006$), and resting heart rate decreasing by 7.68 bpm ($p<0.001$). Furthermore, complete antidiabetic medication discontinuation was safely achieved under medical supervision in 39.3% of medicated patients, highlighting the clinical and economic utility of the program.

Improvements and Suggestions

- **Address the Analytical Confounding of Intensive Caloric Deficit**: Because the entire cohort concurrently adhered to a highly restrictive 800 kcal/day *Prameha* diet, the profound metabolic impacts of a rapid caloric deficit heavily co-confound the independent therapeutic success of the Panchakarma procedures. The authors should add a clarifying statement in the discussion noting that the striking reduction in glycemic markers is a synergistic outcome of both the dietary restriction and procedural components rather than the procedures alone.
- **Elaborate on the Clinical Implications of the Dose-Intensity Findings**: The Pearson correlation revealed a significant inverse association between completed Panchakarma sessions and body weight reduction ($r=-0.46$, $p=0.008$), yet no such linear relationship was found for HbA_{1c} alterations ($r=-0.16$, $p=0.376$). The discussion would be strengthened by expanding upon this threshold effect, explicitly noting that while low-intensity dietary shifts can rapidly drive down glucose levels, progressive central adiposity reduction relies more continuously on sustained procedural exposure.
- **Expand the Justification for Portal-Hepatic Glycyrrhizin Delivery**: The authors note that while systemic glycyrrhizin can theoretically elevate blood pressure through mineralocorticoid pathways, per-rectal administration (*Basti*) utilizes portal venous drainage to maximize hepatic bioavailability and minimize systemic hypertensive side effects. Adding a sentence to explicitly connect this pharmacological mechanism to the observed, paradoxical 7.16 mmHg drop in

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systolic blood pressure would clarify this point for readers unfamiliar with Ayurvedic drug delivery.

- **Acknowledge the Explicit Limitation of Missing Biochemical Data**: The manuscript notes that the absence of lipid profile data in the current retrospective dataset precluded any evaluation of dyslipidemia outcomes. The authors should frame this more explicitly in their limitations paragraph as a crucial missing cardiovascular risk marker that needs to be systematically tracked and verified in prospective iterations of this trial.
- **Contextualize Baseline Conventional Medication Heterogeneity**: Although 87.5% of the cohort ($n=28$) was taking allopathic antidiabetic medication at baseline, the text lacks a specific descriptive breakdown of these pharmacological classes. Integrating a brief sentence or a minor table column specifying whether these individuals were primarily utilizing biguanides, sulfonylureas, or insulin combinations would provide critical clinical depth to the reported 39.3% complete discontinuation rate.
- **Purge Minor Typographical Errors and Structural Fragments**: The manuscript draft contains a few minor formatting artifacts that compromise its overall presentation layout. Specifically, the isolated string "EV" appears within the abstract space, the duplicate word string "measurements measurements" is present in section 2.4, and an isolated marginal fragment "IN JNH PE" is visible near the methodology section. These stray typographical elements must be thoroughly expunged.

Editorial Decision

Decision: **ACCEPT WITH MINOR REVISIONS**

Justification

This retrospective cohort study presents highly compelling and statistically robust data demonstrating the multi-systemic benefits of the CDC program within an understudied, semi-rural Indian T2DM population. The concurrent, significant drops in HbA_{1c}, visceral adiposity indicators, blood pressure, and resting heart rate showcase a comprehensive cardiometabolic risk reduction strategy that outpaces simple glycemic monotherapy. While the study is naturally limited by its single-arm design and modest sample size, these constraints are well-aligned with a preliminary retrospective clinical audit and do not invalidate the importance of the published datasets. The manuscript is accepted for final publication pending the execution of the minor text updates outlined above, specifically the clarification of the dietary confounding factors, elaboration on the dose-intensity divergence, and the removal of the stray layout fragments ("EV", "measurements measurements", and "IN JNH PE").