Preliminary Glycemic Outcomes of the 3DR (Drug, Diet, and Daily Routine) Program in Adults with Type 2 Diabetes Mellitus: A Three-Patient Case Series

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ABSTRACT

Background: Type 2 diabetes mellitus (T2DM) requires integrated pharmacologic and lifestyle management. The 3DR program is a structured clinic-based approach combining individualized Drug, Diet, and Daily Routine components. This case series describes short-term glycemic changes observed in three adults receiving the program.

Case presentation: Three adults with T2DM treated in routine outpatient practice had paired fasting plasma glucose (FPG) and postprandial plasma glucose (PPG) measurements available before and after initiation of the 3DR program. Patient 1 (male, 46 years) changed from FPG 237 to 198 mg/dL and PPG 350 to 215 mg/dL over 15 days. Patient 2 (female, 63 years) changed from FPG 199 to 135 mg/dL and PPG 191.4 to 123 mg/dL over approximately 24 days based on the available dated records. Patient 3 (male, approximately 57–58 years) changed from FPG 171 to 132 mg/dL and PPG 375 to 243 mg/dL over approximately 20 days. Relative FPG changes were -16.5%, -32.2%, and -22.8%, respectively; relative PPG changes were -38.6%, -35.7%, and -35.2%.

Conclusion: In this small uncontrolled case series, short-term FPG and PPG values decreased after initiation of an individualized 3DR program. Because there was no control group, the sample was very small, follow-up was brief, medication and adherence data were incomplete, and HbA1c follow-up was unavailable, causality and durability cannot be established. Prospective controlled evaluation with predefined outcomes is warranted.

Keywords: type 2 diabetes mellitus; Ayurveda; lifestyle intervention; diet; physical activity; integrative medicine; case series; fasting plasma glucose; postprandial glucose

INTRODUCTION

T2DM management commonly requires glucose-lowering pharmacotherapy together with individualized nutrition, physical activity, self-management education, and other health-behavior interventions. Contemporary diabetes standards emphasize positive health behaviors as part of comprehensive diabetes care. Randomized-trial meta-analyses also support clinically meaningful improvements in glycemic control from structured diet and physical-activity interventions.

Ayurvedic medicines are used by many patients with T2DM in India. A large systematic review of randomized trials reported potential glycemic benefits for several Ayurvedic interventions, while also emphasizing limitations in methodological quality and the need for better designed trials. Against this background, D Clinics developed the 3DR framework: Drug, Diet, and Daily Routine. The present report is intended as an initial descriptive case series to document real-world short-term glycemic trajectories and to generate hypotheses for a prospective study.

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METHODS

Study design and setting

Descriptive retrospective case series based on routine clinical records from D Clinics / Rudramrut Multispeciality Clinics in India. The manuscript is structured in accordance with the principles of the CARE case-report guideline. No inferential efficacy testing was performed because the dataset contains only three cases and lacks a comparator group.

Case selection

Cases were included in this preliminary series when (1) the patient had known or clinically documented T2DM, (2) a 3DR treatment plan was recorded, and (3) paired fasting and postprandial glucose values were available in the supplied clinical records. The current sample should be described as a convenience sample unless a complete consecutive-patient screening log can be reconstructed.

The 3DR intervention

The 3DR program comprises three coordinated domains: (1) Drug—individualized glucose-management medicines prescribed by the treating clinician, which may include Ayurvedic formulations and/or continuation of conventional glucose-lowering therapy; (2) Diet—an individualized food plan based on diabetes-related dietary counseling, meal composition, portion control, and patient preferences; and (3) Daily Routine—structured advice on physical activity, sleep, meal timing, medication adherence, self-monitoring, and other daily behaviors. For journal submission, the intervention must be specified reproducibly in a supplementary protocol, including formulation ingredients, manufacturer, dose, timing, duration, diet algorithm, exercise/routine targets, adherence assessment, and rules for modification of concomitant therapy.

Outcomes

The primary descriptive outcomes in this case series were change in FPG and PPG (mg/dL) between the available baseline and follow-up measurements. Percentage change was calculated as (follow-up - baseline) / baseline × 100. HbA1c was recorded when present but was not used as an outcome because paired follow-up HbA1c values were not available.

Ethics and consent

[TO COMPLETE BEFORE SUBMISSION] State the name of the independent Ethics Committee/IRB, approval/waiver number and date, and whether the committee approved retrospective use of clinical records. Obtain written informed consent for publication from each patient. Remove names, phone numbers, VID/PID/laboratory identifiers and other direct identifiers from all submitted figures. If identifiable material is essential, obtain explicit written consent for its publication.

RESULTS

Patient-level outcomes

Case	Age/Sex	Baseline date	Follow-up date	FPG baseline → follow-up	FPG change	PPG baseline → follow-up	PPG change
1	46/M	07-Sep-2026	22-Sep-2026	237 → 198 mg/dL	-39 mg/dL (-16.5%)	350 → 215 mg/dL	-135 mg/dL (-38.6%)

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2	63/F	20-Jul-2026	13-Aug-2026*	199 → 135 mg/dL	-64 mg/dL (-32.2%)	191.4 → 123 mg/dL	-68.4 mg/dL (-35.7%)
3	57–58/M†	02-Sep-2026	22-Sep-2026	171 → 132 mg/dL	-39 mg/dL (-22.8%)	375 → 243 mg/dL	-132 mg/dL (-35.2%)

Case 1

A 46-year-old man with a documented history of diabetes mellitus for approximately two years presented with burning sensations in both soles, generalized weakness and mild palpitations. A laboratory report dated 07-Sep-2026 showed FPG 237 mg/dL and PPG 350 mg/dL. The clinic record documents an individualized 3DR prescription including Diyoka and Gluconull, with an additional decoction/kashaya entry that should be verified against the original prescription before publication. On 22-Sep-2026, FPG was 198 mg/dL and PPG 215 mg/dL. This corresponds to decreases of 39 mg/dL (16.5%) in FPG and 135 mg/dL (38.6%) in PPG over 15 days.

Case 2

A 63-year-old woman with elevated blood glucose had a laboratory report dated 20-Jul-2026 showing FPG 199 mg/dL and PPG 191.4 mg/dL. A clinic note also records an earlier HbA1c value of 9.0% dated 10-Jul-2026; the source laboratory report for that HbA1c was not supplied and should be verified before inclusion as a formal baseline measure. The treatment record documents individualized 3DR therapy including Diyoka and Gluconull and a kashaya entry. A handwritten follow-up dated 13-Aug-2026 records FPG 135 mg/dL and PPG 123 mg/dL, corresponding to decreases of 64 mg/dL (32.2%) and 68.4 mg/dL (35.7%), respectively, compared with the 20-Jul laboratory values.

Case 3

A male patient in his late 50s with approximately 12 years of elevated blood glucose was documented as taking metformin 1000 mg and glimepiride 1 mg before/at presentation; the exact schedule and whether these medicines were continued unchanged must be verified. A clinic record dated 02-Sep-2026 recorded FPG 171 mg/dL and PPG 375 mg/dL. The 3DR prescription included Diyoka and Gluconull, with a kashaya entry. A laboratory report dated 22-Sep-2026 showed FPG 132 mg/dL and PPG 243 mg/dL, representing decreases of 39 mg/dL (22.8%) and 132 mg/dL (35.2%), respectively.

DISCUSSION

All three patients showed lower FPG and PPG values at the available short-term follow-up. The magnitude of the observed reductions is clinically noteworthy as a descriptive signal, particularly for postprandial glucose, but these observations cannot establish that the 3DR program caused the changes. Short-term glucose values vary with meals, activity, medication adherence, acute illness, laboratory timing and other factors. Regression to the mean is also plausible because patients may enter treatment when glucose values are unusually high.

The 3DR concept is biologically and behaviorally plausible as a multicomponent care model because its Diet and Daily Routine domains overlap with established diabetes self-management approaches involving nutrition, physical activity and behavioral support. Evidence from systematic reviews suggests that structured lifestyle interventions can improve glycemic outcomes in T2DM. However, evidence supporting a multicomponent program in general cannot be used to attribute efficacy to the specific 3DR package or to any individual Ayurvedic formulation.

The present series should therefore be positioned as hypothesis-generating evidence. A stronger next study would prospectively enroll consecutive adults with T2DM, pre-register the protocol, standardize the 3DR

intervention, document all concomitant medicines, measure adherence and adverse events, and use HbA1c at 12 weeks as a primary outcome. A comparator arm receiving usual diabetes care would substantially improve causal interpretation.

LIMITATIONS

Major limitations are the very small convenience sample; absence of a control group; short and nonuniform follow-up; incomplete documentation of diet, daily-routine adherence and concomitant medication changes; inconsistent age/date information in some records; reliance partly on handwritten values; lack of paired HbA1c; lack of systematic safety/adverse-event capture; and potential selection and reporting bias. The findings should not be described as proof of efficacy, remission, reversal, or medication independence.

CONCLUSION

This preliminary three-patient case series documents short-term reductions in fasting and postprandial glucose values during individualized 3DR (Drug, Diet, and Daily Routine) management. The observations justify prospective evaluation but are insufficient to establish efficacy or causality. A protocolized, ethically approved prospective study with HbA1c, safety outcomes, adherence measures, and an appropriate comparator is recommended.

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Appendix A. Data verification checklist before submission

- Verify exact patient ages, diagnosis duration, baseline dates and follow-up dates from source records.
- Obtain paired HbA1c at baseline and approximately 12 weeks whenever possible.
- Record all conventional antidiabetic drugs at baseline and every dose change during follow-up.
- Provide full composition, manufacturer, batch/quality information, dose and schedule for every Ayurvedic formulation.
- Define the Diet algorithm and Daily Routine prescription in reproducible detail.
- Record adherence, hypoglycemia, gastrointestinal symptoms, liver/kidney events and all other adverse events.
- Obtain written patient consent for publication and Ethics Committee/IRB determination.
- De-identify all images; do not publish names, phone numbers, laboratory IDs or clinic registration numbers.

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- Use consecutive cases or a predefined sampling frame rather than selecting only responders.
- Do not use 'remission' unless accepted remission criteria and sufficient duration are met.

Appendix B. Recommended prospective study design

Suggested title: 'Effectiveness and Safety of a Structured 3DR (Drug, Diet, and Daily Routine) Program for Adults with Type 2 Diabetes: A Prospective Controlled Clinical Study.' Primary endpoint: change in HbA1c from baseline to 12 weeks. Secondary endpoints: FPG, 2-hour PPG, body weight, waist circumference, blood pressure, medication burden, hypoglycemia, quality of life, adherence and adverse events. Predefine eligibility criteria, sample-size calculation, statistical analysis plan, missing-data handling, and safety stopping rules; prospectively register the study in an appropriate clinical-trial registry when required.