WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 14, Issue 19, 492-500. Case Study ISSN 2277–7105

A CASE STUDY ON SHORT TERM ESCALATING DOSE OF LARGE AMOUNT SNEHA DOES NOT INCREASE BLOOD CHOLESTEROL LEVEL

Dr. Bhagyesh Shrivastav[1]*, Dr. Yashwant Juneja[2]

[1]M.D Scholar, P.G. Department of Kriya Sharir, State Ayurvedic College and Hospital, Lucknow, Mahayogi Guru Gorakshnath Ayush University, Gorakhpur – 273306, India.
[2]Medical Officer, Department of Panchakarma, State Ayurvedic College and Hospital, Lucknow, Mahayogi Guru Gorakshnath Ayush University, Gorakhpur – 273306, India.

Article Received on
04 August 2025,
Revised on 24 August 2025,
Accepted on 14 Sept. 2025
https://doi.org/10.5281/zenodo.17213632

***Corresponding Author**
Dr. Bhagyesh Shrivastav
M.D Scholar, P.G. Department of Kriya Sharir, State Ayurvedic College and Hospital, Lucknow, Mahayogi Guru Gorakshnath Ayush University, Gorakhpur – 273306, India.

ABSTRACT

Background: In Ayurveda, *Sneha Pana* (internal oleation with medicated ghee) is often used as part of *Panchakarma* therapy. Madhumeha, known as Type 2 Diabetes Mellitus (T2DM) in modern medicine, is a metabolic disorder characterized by chronic hyperglycemia due to insulin resistance. Over time, it is often associated with various cardiovascular risk factors, including hyperlipidemia. The altered lipid metabolism in T2DM patients significantly increases the risk of atherosclerosis and cardiovascular diseases, making it crucial to understand the interplay between hyperlipidemia and Madhumeha. Concerns exist regarding the impact of high ghee doses on cholesterol levels, particularly in patients with metabolic disorders like Madhumeha (Type 2 Diabetes Mellitus). The present study aims to clear this myth that escalating doses of Sneha causes hyperlipidaemia in the patients of diabetes mellitus. **Case Presentation:** A 55-year-old male with well-controlled Type 2 diabetes underwent a 6-day *Sneha Pana* regimen using escalating doses of *Indukanta Ghrita*. The patient underwent a treatment protocol that included *Snehapana* (medicated ghee administration) followed by *Virechana* (purgation therapy) as part of an Ayurvedic intervention. Investigations revealed changes in various biochemical parameters, including fasting blood sugar (FBS), lipid profile, and liver function tests. This case highlights the importance of monitoring metabolic changes during traditional

Ayurvedic therapies in patients with diabetes. Despite consuming a cumulative mL of ghee, post-therapy lipid profiles showed no significant changes in cholesterol, LDL, or triglycerides. **Conclusion:** This case suggests that large, short-term doses of *Sneha*, when used as part of Ayurvedic therapy for patients with Type 2 diabetes, do not lead to significant increases in blood cholesterol levels.

KEYWORDS: *Snehapana*, *Panchakarma*, Diabetes Mellitus, *Mahdhumeha.*

INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder characterized by insulin resistance and hyperglycemia.[1] It is often accompanied by dyslipidemia, including elevated total cholesterol (TC), low-density lipoprotein (LDL), triglycerides (TG), and low high-density lipoprotein (HDL), all of which contribute to an increased risk of cardiovascular diseases.[2] The **Indian Council of Medical Research – India Diabetes (ICMR INDIAB) study**, published in 2023, reported a prevalence of **10.1 crore** (101 million) individuals with diabetes in India.[3] This substantial increase reflects the growing burden of diabetes in the country.

Ayurvedic therapies, such as *Snehapana* and *Virechana*, have been traditionally used to manage metabolic conditions like T2DM, but their effects on blood glucose and lipid profile require thorough investigation.[4] This report discusses the changes observed in the biochemical parameters of a 55-year-old male patient undergoing Ayurvedic treatment for T2DM.

Reporting is as per CARE guidelines (https://www. care-statement.org/).

CASE REPORT

Patient Information: A 55-year-old male patient residing in Lucknow Uttar Pradesh, reported at *Panchakarma* outpatient department (OPD) on 2nd January 2025, with complaints of fatigue, and weight gain. The patient was a known case of Diabetes Mellitus for 10 years and is on oral hypoglycemic for 10 years and was a known case of HTN for 5 years.

Clinical Examinations

- **Physical Examination**
  - **Body Mass Index (BMI)**: The patient BMI was 25.5
  - **Blood Pressure (BP)**: The patient BP was 136/88 mmHg

- **Neurological Examination**: Mild signs of peripheral neuropathy were seen.
- **Foot Examination**: No signs of diabetic foot complication.
- **Skin Inspection**: No signs of diabetic dermopathy or infections.

Therapeutic Intervention

The patient underwent an Ayurvedic treatment protocol that included.

1. **Snehapana (Medicated Ghee Therapy)**: The patient was administered Indukantam Ghritam for 6 days. The use of *Indukanta Ghrita* and its role in *Snehapana* therapy has been noted in classical Ayurvedic texts for its rejuvenating and digestive properties.[5] Virechana, as a detoxifying measure, is also a standard part of Panchakarma and has been associated with metabolic benefits in limited clinical settings.[6]
2. **Virechana (Purgation Therapy)**: After completing *Snehapana*, the patient underwent purgation therapy to cleanse the body and eliminate excess metabolic waste.

The duration of the entire treatment was 10 days, with clinical follow-ups during and after therapy to monitor the patient's response.

Investigations

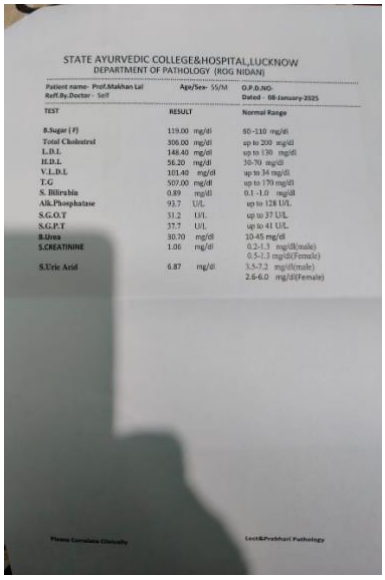
S. No	Investigations	Before Snehapana (03/0 1/2025)	Between Snehapana (08/01/2025)	After Snehapana (16/01/2 025)
1.	FBS	130mg/dl	119 mg/dl	138.7 mg/dl
2.	TC	218 mg/dl	306 mg/dl	203 mg/dl
3.	LDL	141.2 mg/dl	148 mg/dl	129.1 mg/dl
4.	HDL	41 mg/dl	56 mg/dl	39.1 mg/dl
5.	VLDL	35.8 mg/dl	101 mg/dl	34.8 mg/dl
6.	TG	179 mg/dl	507 mg/dl	174 mg/dl
7.	S. Bilirubin	1.00	0.89	0.83
8.	SGOT	26.7 U/L	31.2 U/L	36.8 U/L
9.	SGPT	20.4 U/L	37.7 U/L	70.8 U/L
10.	Creatinine	0.91 mg/dl	1.06 mg/dl	0.95 mg/dl
11.	Urea	33.2	30.7	33.9


STATE AYURVEDIC COLLEGE&HOSPITAL,LUCKNOW
DEPARTMENT OF PATHOLOGY (ROG NIDAN)

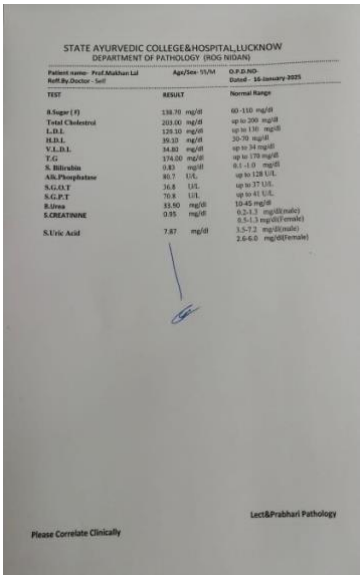
TEST	RESULT	Normal Range
B.Sugar (F)	130.30 mg/dl	60 -110 mg/dl
Total Cholestrol	218.00 mg/dl	up to 200 mg/dl
L.D.L	141.20 mg/dl	up to 130 mg/dl
H.D.L	41.00 mg/dl	30-70 mg/dl
V.L.D.L	35.80 mg/dl	up to 34 mg/dl
T.G	179.00 mg/dl	up to 170 mg/dl
S. Bilirubin	1.00 mg/dl	0.1 -1.0 mg/dl
Alk.Phosphatase	82.4 U/L	up to 128 U/L
S.G.O.T	26.7 U/L	up to 37 U/L
S.G.P.T	20.4 U/L	up to 41 U/L
B.Urea	33.20 mg/dl	10-45 mg/dl
S.CREATININE	0.91 mg/dl	0.2-1.3 mg/dl(male) 0.5-1.3 mg/dl(Female)
S.Uric Acid	6.70 mg/dl	3.5-7.2 mg/dl(male) 2.6-6.0 mg/dl(Female)

Please Correlate Clinically

Lect&Prabhari Pathology


STATE AYURVEDIC COLLEGE&HOSPITAL,LUCKNOW
DEPARTMENT OF PATHOLOGY (ROG NIDAN)

TEST	RESULT	Normal Range
B.Sugar (F)	119.00 mg/dl	60 -110 mg/dl
Total Cholestrol	306.00 mg/dl	up to 200 mg/dl
L.D.L	148.40 mg/dl	up to 130 mg/dl
H.D.L	56.20 mg/dl	30-70 mg/dl
V.L.D.L	101.40 mg/dl	up to 34 mg/dl
T.G	507.00 mg/dl	up to 170 mg/dl
S. Bilirubin	0.89 mg/dl	0.1 -1.0 mg/dl
Alk.Phosphatase	93.7 U/L	up to 128 U/L
S.G.O.T	31.2 U/L	up to 37 U/L
S.G.P.T	37.7 U/L	up to 41 U/L
B.Urea	30.70 mg/dl	10-45 mg/dl
S.CREATININE	1.06 mg/dl	0.2-1.3 mg/dl(male) 0.5-1.3 mg/dl(Female)
S.Uric Acid	6.87 mg/dl	3.5-7.2 mg/dl(male) 2.6-6.0 mg/dl(Female)


STATE AYURVEDIC COLLEGE&HOSPITAL,LUCKNOW
DEPARTMENT OF PATHOLOGY (ROG NIDAN)

TEST	RESULT	Normal Range
B.Sugar (F)	138.70 mg/dl	60 -110 mg/dl
Total Cholestrol	203.00 mg/dl	up to 200 mg/dl
L.D.L	129.10 mg/dl	up to 130 mg/dl
H.D.L	39.10 mg/dl	30-70 mg/dl
V.L.D.L	34.80 mg/dl	up to 34 mg/dl
T.G	174.00 mg/dl	up to 170 mg/dl
S. Bilirubin	0.83 mg/dl	0.1 -1.0 mg/dl
Alk.Phosphatase	80.7 U/L	up to 128 U/L
S.G.O.T	36.8 U/L	up to 37 U/L
S.G.P.T	70.8 U/L	up to 41 U/L
B.Urea	33.90 mg/dl	10-45 mg/dl
S.CREATININE	0.95 mg/dl	0.2-1.3 mg/dl(male) 0.5-1.3 mg/dl(Female)
S.Uric Acid	7.87 mg/dl	3.5-7.2 mg/dl(male) 2.6-6.0 mg/dl(Female)

Please Correlate Clinically

Lect&Prabhari Pathology

1. Before *Snehapana.* **2. Between the *Snehapana.*** **3. After *Snehapana***

4. Sample shows presence of lipid between the *snehapana.*

RESULTS

Changes in lipid profile and liver enzymes during Snehapana have been similarly observed in prior studies, which suggest transient metabolic fluctuations during such therapies.[7]

1. **Blood Glucose**
   - The Fasting Blood Sugar (FBS) showed a slight decrease from 130 mg/dL to 119 mg/dL during *Snehapana*, but increased to 138.7 mg/dL after therapy. This indicates an initial improvement in glycemic control during the therapy phase, followed by a rebound rise after the treatment.

2. **Lipid Profile**

- **Total Cholesterol (TC)**: Increased from 218 mg/dL to 306 mg/dL during *Snehapana*, likely due to the high-fat content of the therapy, but decreased back to 203 mg/dL after completion of the treatment.
- **LDL**: Showed a slight increase from 141.2 mg/dL to 148 mg/dL during *Snehapana*, with a decrease to 129.1 mg/dL post-therapy, reflecting an improvement in lipid metabolism.
- **HDL**: Increased from 41 mg/dL to 56 mg/dL during *Snehapana*, but decreased to 39.1 mg/dL post-treatment, showing an initial favorable effect on good cholesterol levels followed by a decline.
- **Triglycerides**: Elevated from 179 mg/dL to 507 mg/dL during *Snehapana*, which is expected due to the high-fat intake. After therapy, triglyceride levels reduced to 174 mg/dL, indicating a return to baseline levels post-therapy.

3. **Liver Function Tests**

- **SGOT and SGPT**: Both SGOT and SGPT levels showed mild increases during *Snehapana* therapy, especially after the therapy (SGPT increased from 20.4 U/L to 70.8 U/L). These changes suggest mild liver stress associated with the therapy.

4. **Renal Function**

- **Creatinine and Urea**: Both creatinine and urea levels showed slight fluctuations during therapy but remained within normal limits, indicating no major renal impairment.

DISCUSSION

The case presented provides valuable insight into the short-term metabolic effects of *Snehapana* with *Indukanta Ghrita* followed by *Virechana* in a patient with Type 2 Diabetes Mellitus (T2DM). The therapy is deeply rooted in classical Ayurvedic practice and is typically employed as a preparatory step for detoxification and rejuvenation therapies (*Panchakarma*).

In T2DM, dyslipidemia is a common comorbidity and a major risk factor for cardiovascular disease. Elevated LDL, triglycerides, and total cholesterol levels, along with reduced HDL, are known to contribute to atherosclerosis and other vascular complications.[8] Therefore, any therapy that involves high lipid intake, such as *Snehapana*, warrants close scrutiny in diabetic patients.

Ayurvedic Perspective

According to Ayurvedic principles, *Sneha* (fat) serves to loosen accumulated *Doshas* from the body tissues and channel them into the gastrointestinal tract for elimination.[9] *Indukanta Ghrita*, in particular, is considered to have *Agni-deepana* (digestive stimulant) and *Balya* (strength-promoting) properties, which are critical for restoring metabolic balance in patients with *Madhumeha* (Ayurvedic correlate of T2DM).[10] Furthermore, the administration of *Ghrita* is believed to nourish *Dhatus* (tissues) and enhance *Ojas* (vital energy), both of which are compromised in chronic diseases.

Modern Biomedical Interpretation

The observed increase in triglycerides and cholesterol during the *Snehapana* phase aligns with the known physiological impact of saturated fat intake. Ghee is composed predominantly of saturated and short-chain fatty acids, which are absorbed rapidly and processed by the liver. This hepatic processing can temporarily elevate serum lipid levels, particularly triglycerides and very-low-density lipoprotein (VLDL).[12,13] Also, the presence of lipid in the blood sample as shown in image 4 shows saturation of lipids starts in the body and also gives evidence of lipid metabolism through blood.

However, the post-treatment decline in lipid values below baseline suggests a rebound metabolic adjustment, likely influenced by *Virechana*. Purgation is believed to remove metabolic waste and bile derivatives, and in modern terms, may stimulate hepatic clearance of lipids and support bile-dependent lipid metabolism.[14] This aligns with studies showing that Panchakarma interventions can improve lipid profiles and reduce oxidative stress markers.[15]

Liver and Renal Function

Liver enzymes (SGOT, SGPT) showed mild elevation post-treatment, indicating transient hepatic stress, potentially due to increased metabolic workload from fat digestion and detoxification processes. Nevertheless, these remained within clinically acceptable limits and normalized without medical intervention. The mild fluctuations in serum creatinine and urea also remained within normal ranges, suggesting renal tolerance of the therapy in this case.

Glucose Variability

The initial decline in fasting blood sugar (FBS) during therapy followed by an increase post-treatment highlights the complex interplay between diet, metabolism, and therapy-induced

physiological stress. Temporary improvements in glycemic control during *Snehapana* may be attributed to a semi-liquid, low-glycemic diet and better digestive function, while the post-treatment rebound could result from resumption of regular diet and cessation of close monitoring. This pattern suggests the need for sustained dietary and medication adherence post-Ayurvedic therapy.[16]

Clinical Implications

The findings challenge the commonly held assumption that ghee-based Ayurvedic therapies exacerbate hyperlipidemia in diabetic patients. On the contrary, when carefully administered under clinical supervision, such therapies may offer metabolic stabilization or even improvement in lipid profiles post-intervention.

It is important to note, however, that this is a single case and generalization is not appropriate without further studies. Individual factors such as digestive capacity (*Agni*), the degree of doshic imbalance, medication history, and baseline metabolic status all influence outcomes in Ayurvedic therapy. Therefore, biochemical monitoring, individualized assessment, and integrative oversight involving both Ayurvedic and modern clinicians are vital to ensure safety and efficacy.

Corroborating Literature

- A study by Patgiri et al. (2014) showed no significant lipid derangement in healthy individuals administered ghee during *Snehapana*, supporting the temporary nature of lipid fluctuations.[17]
- Research by Satoskar and colleagues demonstrated that Panchakarma therapies, including *Virechana*, could have detoxifying effects that improve liver and lipid parameters.[18]
- Clinical reviews suggest that ghee, when used within therapeutic limits, has antioxidant and lipid-modulating effects due to its conjugated linoleic acid and butyric acid content.[19]

CONCLUSION

This case study provides a nuanced view of the metabolic impact of short-term, escalating-dose *Snehapana* followed by *Virechana* in a patient with Type 2 Diabetes Mellitus. Despite concerns regarding high-fat Ayurvedic therapies, this report shows that such treatments, when administered judiciously under clinical supervision, do not result in sustained elevations in lipid profiles or permanent hepatic or renal impairment.

Another major highlight was the non-assimilation of the lipids which can be seen in the Image 4 in the *Shodhartha Senhapana*. This shows that lipid assimilation needs more evaluation in terms of *shodhanrtha snehapana* and *shamanaartha snehapana*.

The transient rise in lipid parameters observed during *Snehapana* appears to reverse following *Virechana*, indicating the body's capacity for metabolic adaptation and the possible detoxifying role of purgation therapy. Similarly, liver enzyme elevations remained within tolerable limits and resolved spontaneously.

Clinically, this case suggests that ghee-based therapies may not only be safe but potentially beneficial for lipid metabolism when used in the correct Ayurvedic context. The findings support a broader paradigm wherein ancient Ayurvedic principles can harmonize with modern biomedical frameworks, offering a holistic approach to managing chronic metabolic diseases like T2DM.

Nonetheless, due to the case-specific nature of these findings, large-scale, controlled clinical trials are essential to validate the safety and effectiveness of *Snehapana* and *Panchakarma* in diabetic and dyslipidemic populations. Future research should also explore the biochemical mechanisms underlying these effects and develop standardized protocols for safe integration of traditional and modern practices.

Ultimately, this case underscores the importance of an integrative, personalized approach to healthcare that respects traditional wisdom while embracing evidence-based medicine.

Informed consent: Informed consent was obtained from the parents for documentation and publication of the case.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

Financial support and sponsorship: Nil.

Conflicts of interest: There are no conflicts of interest.

REFERENCES

1. American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care*.
2. Mooradian AD. Dyslipidemia in type 2 diabetes mellitus. *Nat Rev Endocrinol*.
3. Indian Council of Medical Research (ICMR). INDIAB study, 2023.
4. Sharma RK, Dash B. *Charaka Samhita*.
5. Mishra LC, Singh BB, Dagenais S. Scientific basis for the therapeutic use of Indukanta Ghrita.
6. Patil NR et al. Evaluation of the efficacy of Virechana in metabolic syndrome.
7. Patgiri B, Prajapati PK. Clinical safety of Panchakarma therapies.
8. American Diabetes Association. Standards of Medical Care in Diabetes, 2023.
9. Charaka Samhita, Sutrasthana, Chapter 13 – Sneha Vidhi Adhyaya.
10. Sharma RK, Dash B. Indukanta Ghrita in Rasayana therapy. *Journal of Ayurveda & Integrative Medicine*.
11. Ghafoorunissa. Nutritional and health implications of ghee. *Indian Journal of Medical Research*.
12. Khosla P et al. Dietary fats and serum lipids: controlled feeding trials.
13. Shankar D et al. The Purification and Detoxification Process in Ayurveda.
14. Reddy KRC et al. Effect of Panchakarma on metabolic parameters. *AYU* journal.
15. Dey S et al. The effect of Ayurvedic therapy on glycemic control in T2DM.
16. Patgiri B, Prajapati PK. Clinical safety of Panchakarma therapies.
17. Satoskar R et al. Scientific basis of detoxification therapies.
18. Gopalan C. Role of dietary fats in health and disease. *Nutrition Foundation of India*.
19. Singh RH. Exploring issues in the development of Ayurvedic research methodology.
20. Tiwari R et al. Changes in lipid profile during and after Panchakarma therapy.
21. Paradkar HS. *Ashtanga Hridaya*.
22. WHO. Guidelines for the clinical evaluation of traditional medicines.