

COMPLIMENTARY EFFECT OF KRIPALAVANANDJI YOGA ON BIOCHEMICAL PARAMETERS IN PATIENT WITH TYPE 2 DIABETES: A CASE STUDY

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Abstract

One of the biggest public health issues in the modern world is type 2 diabetes mellitus (T2DM). (15) Diabetes is treated with the use of drugs in order to maintain anthropometric measurements, stress levels, lipid profiles, blood glucose levels, and lipid profiles. (4). Earlier research shows Yoga lowers triglyceride, free fatty acid, and low density lipoprotein cholesterol levels while improving high density lipoprotein cholesterol levels in diabetes mellitus patients (8). We present the case of diabetes mellitus patient, which was treated for 6 months with kripalavanandji module which consists of asana, mudra, pranayama and diet. This intervention was directed towards the patient alleviating symptoms and to reduce the TSH value. The case shows that diabetes and hypothyroidism may be successfully managed with the kripalavanandji yoga techniques.

Keywords: Kripalavanandji, yoga, diabetes mellitus 2, FBS, PBBS and TSH.

INTRODUCTION

At least 366 million people worldwide have diabetes, according to the World Health Organization (WHO), in 2011. By 2030, this number will increase to 552 million. People with type 2 diabetes are becoming more prevalent everywhere. (1). The second-largest population in the world with type-2 diabetes mellitus (T2DM), which has serious health and socioeconomic consequences, is found in India. (2) Diabetes mellitus comes in two main forms: type 1 diabetes, which is insulin-dependent, and type 2 diabetes, which is not (type 2 diabetes). In affluent countries, more than 90% of those with diabetes have type 2 diabetes, and this number is significantly greater in developing nations. (3) There are numerous cutting-edge pharmacological treatments for diabetes. However, prolonged drug use has some negative side effects and consequences, such as drug dependence, and with time, pharmaceuticals may lose their effectiveness relative to the initial response, which may cause patients to acquire drug resistance. (5,6). Yoga is a physical practise that has been studied for many years and has grown in popularity because of its many health advantages. It is a successful, affordable, simple to use lifestyle modification technique that has no side effects (7).

PRESENTING COMPLAINT

A 67 year old Indian male with no history of smoking or alcohol was diagnosed with type 2 diabetes from past 15 years and also hypothyroidism from past 5 year. Since then he is on medication for both the condition.

THERAPEUTIC FOCUS AND ASSESSMENT

Swami Kripalavanandji yoga intervention module for the Diabetes patient. They were given various asana and pranayama practice for 1 hour in 6 days a week for 6 months. Kripalavanandji has given the classical yoga practices for various diseases and also diet is given to the patient. They follow the diet upto their capacity. The yoga practice and diet module are given below

Yoga-asanas and postures for the patients with diabetes module is given in table 1

DIET

Pathya:

Dietary bread, wheat bran bread and bhakri, barley bread and bhakri, , chana, chana dal, mug, peas - all these can be eaten in small quantities. Butter Extracted Buttermilk or its Curry, Eggplant, Onion, Garlic, Radish, Tomato, Parval, Carrot, Kankoda, Cabbage, Curry, Dodi, Fenugreek Vegetable, palak, tanderja leaves vegetables, Rice, Salt and Suva Vegetable, Milk There is a diet. Limit the use of green vegetables. Rye, falsa, jambu, apple, pineapple, pomegranate, amla, grape, citrus, orange, ripe banana, raw papaya etc. can also be taken in the diet. Use fruits essentially and prudently. Drink a decoction of neem juice, karela juice or bili juice.

Apathy: Do not eat fried or soaked food, do not eat rice dishes. Also do not eat ghee, milk, yogurt, butter and other nutrients.

FOLLOW UP AND OUTCOMES

The report suggests that he has 154 mg/dl FBS and 219 mg/dl PBBS in the year 23rd October 2021 And has a TSH value of 7.62 in the year 2020. After doing yoga module according to swami kripalavanandji the FBS is 134.96, PBBS is 139.96 and TSH is 3.1100. This shows that there was significant improvement in FBS, PBBS and TSH. The quality of life always increases. Yoga intervention was given 6 days a week for a year. The response was noted in this case.

Variable	Pre result	Post result	Difference in percentage
TSH	7.62	3.1100	84%
FBS	154.03	134.96	13.9%
PBBS	219.06	139.96	44%

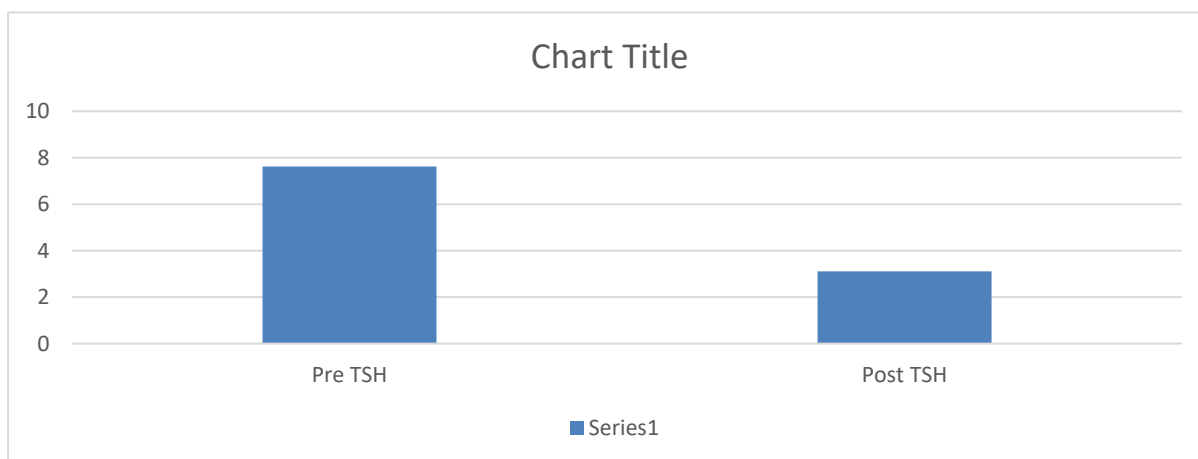
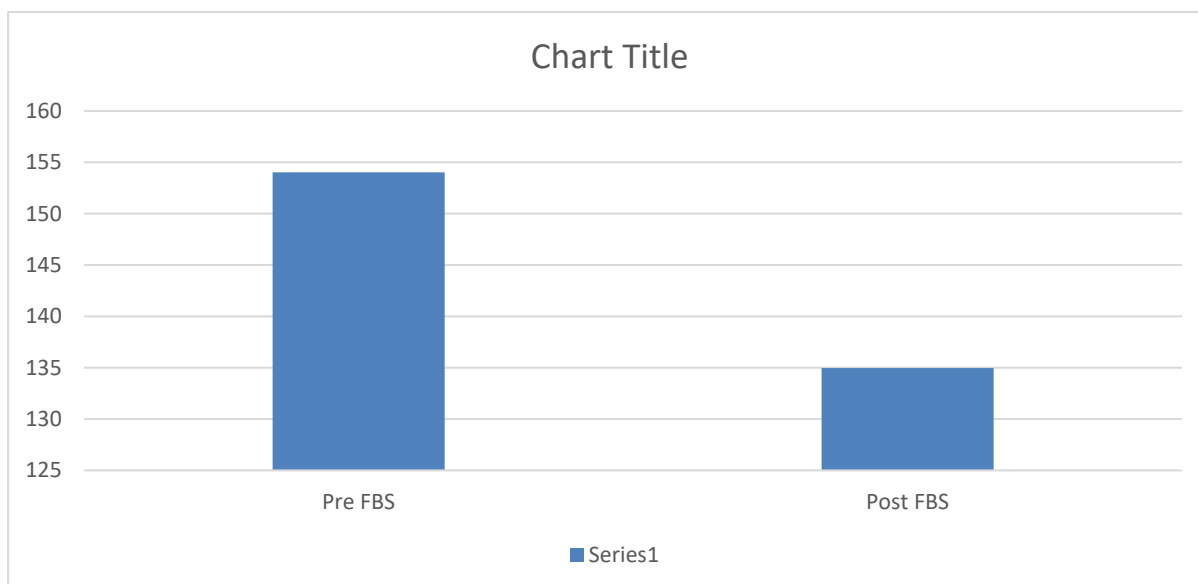


Table 2 : Pre TSH and Post TSH value.



October – December 2022

Table 3 : Pre FBS and Post FBS value

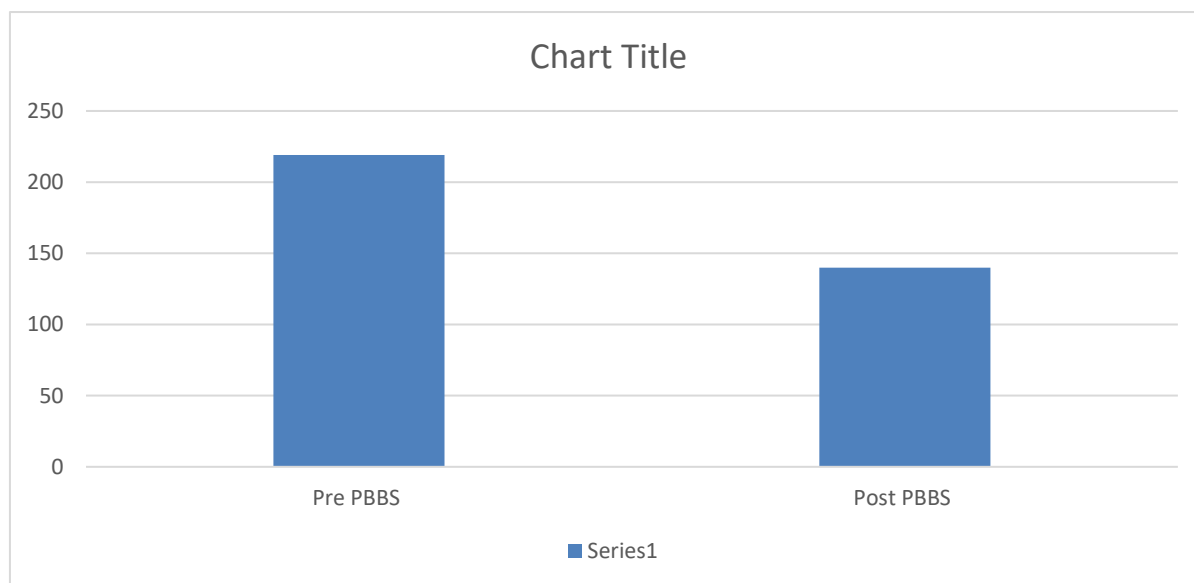


Table 4: Pre PBBS and Post PBBS result

DISCUSSION

Yoga encourages fitness and food discipline (9). Regular yoga practise lowers the chance of complications from diabetes. Patients with diabetes mellitus are thought to have sudden death as a result of cardiac autonomic dysfunction. Clinical investigations have demonstrated that consistent yoga practise decreased the risk of cardiovascular events and enhanced cardiac autonomic function without regard to glycemic management.(10) In diabetic individuals, yoga therapy also improves nerve conduction and cognitive function by stabilising the coagulation profile (11). When type 2 diabetic patients' glycemic control is improved without diet or exercise, such as by increasing their insulin dosage or taking anti-diabetic medications, weight gain occurs. Yoga, on the other hand, enhances glycemic control without causing an increase in body weight, and some studies have even found that it causes weight loss (12). In addition to its benefits for relaxation and stress reduction, yoga also affects dietary choices, behavioural changes, and physical activity (13). The practise of yoga has also been shown to have a positive impact on one's mental equilibrium, reducing anxiety and tension while promoting hormone balance and feelings of well-being. Its capacity to boost endogenous melatonin release is credited with contributing to this feeling of wellbeing.(14) Numerous studies on the impact of the transcendental meditation (TM) programme on hormone levels have been reported. The levels of cortisol and TSH were lower after 4 months of TM practise, but growth hormone levels were higher.(16)

S. B. Rawal and colleagues revealed that a decrease in metabolic activity may indirectly decrease the body's need for thyroxin (1994). (17). Yoga asanas, which include dynamic stretching of the body, are thought to improve insulin secretion in people with chronic diabetes by regenerating pancreas cells (18) In cases of insulin resistance, changes in triglyceride metabolism, free fatty acid turnover, and lipolysis are typically linked to dyslipidemia. Diabetes is hypothesised to cause impaired lipoprotein lipase and increased hepatic lipase activity as a result of insulin resistance. Impaired insulin secretion has been linked to long-term exposure to high free fatty acid levels.(19) Physical activity raises HDL levels and decreases the concentration of very low-density lipoprotein cholesterol and triglycerides (20). In earlier research, senior women with diabetes who participated in a 12-week yoga intervention exhibited a significant reduction in triglycerides, total cholesterol, LDL, and improved HDL (21).Another randomised control experiment found that practising yoga Nidra for six months lowers the serum TSH level in women with irregular menstrual cycles.(22) The enzyme responsible for clearing TG-rich lipoproteins, lipoprotein lipase (LPL), becomes less active when thyroid hormone levels are low, which causes serum TG levels to rise. (23) After three months of yoga practise, Agrawal et al. found that type 2 diabetes individuals had significantly improved glycaemic control and lipid profiles, with significant decreases in serum TC, triglyceride, and LDL concentrations and concurrent significant increases in HDL concentrations.(24) Hence the findings from the above case seems to be a ray of hope for chronic debilitating conditions like diabetes and hypothyroidism also the intervention is cost effective and feasible for the disease population.

CONCLUSION

Kripalu swami yoga appeared to be feasible intervention and beneficial effects on several physical, glucose levels and TSH were reported. This practice was helpful in treating the patient of diabetes. And also helpful in controlling TSH. Hence the focus in this area is very important this approach can be taken into consideration for further treatment and research work for diabetes.

PATIENTS PERSPECTIVE

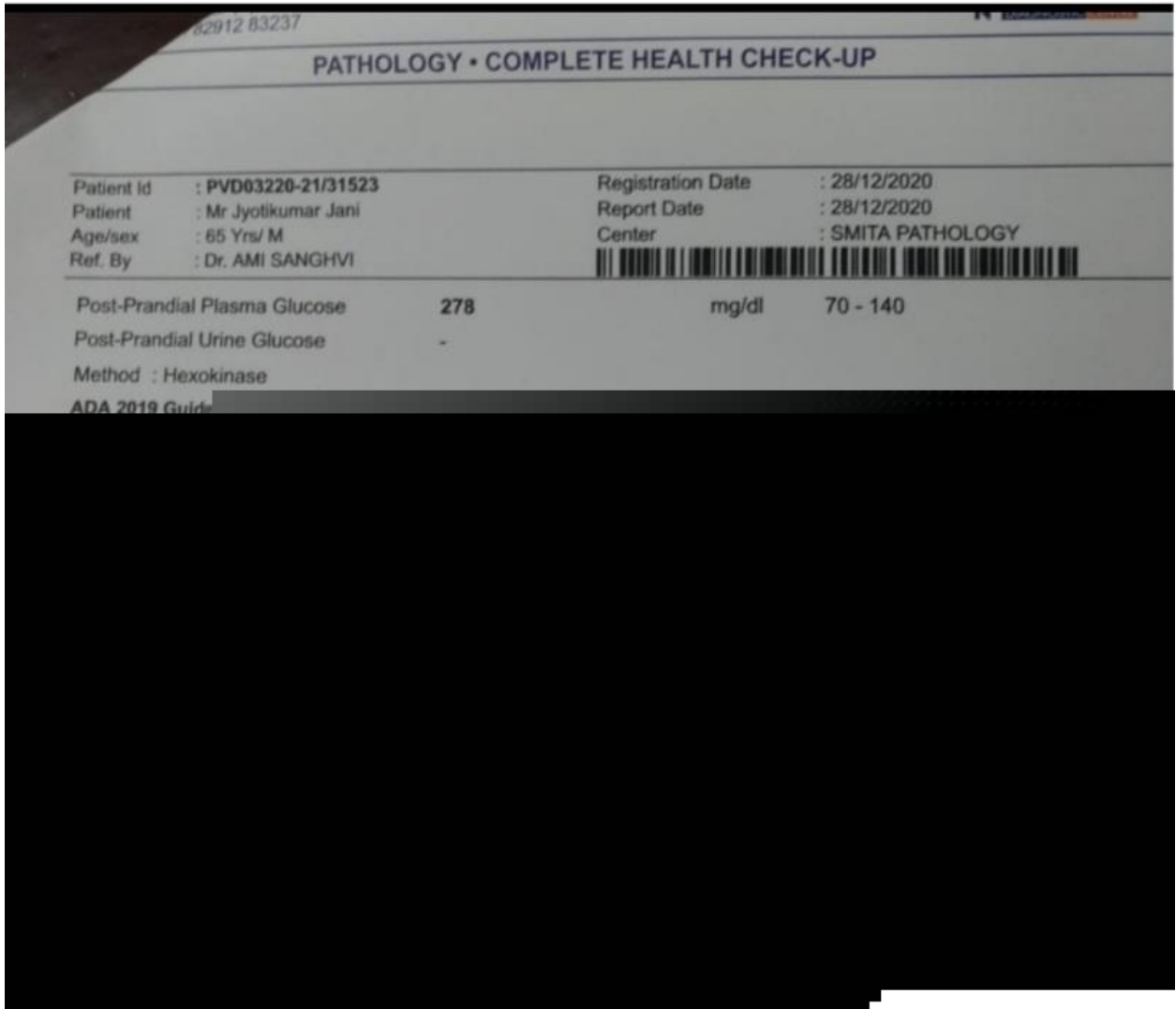
The patient was satisfied with the improvements and hopes recovery in fbs from yoga practice and wish to continue in his day to day life.

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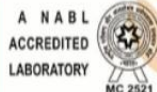
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Annexure





**M. M. LABORATORY
& RESEARCH CENTER**
HONESTY • ACCURACY • QUALITY



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Lab No.	: 7	707-Jun-2022	Collected Sample	Passport No	:
Patient's Name	: MR JYOTIKUMAR JANI		Reg. Date & Time	: 07-Jun-2022	7:42 am
Sex / Age	: MALE / 67 Years		Coll Date & Time	: 07-Jun-2022	8:06 am
Referred By Dr	: DR AMI SANGHVI		Report Date & Time	: 07-Jun-2022	4:08 pm
Collected At	: M M MEDICAL CENTER (DAHISAR)		Print Date & Time	: 07-Jun-2022	4:13 pm

TSH (THYROID STIMULATING HORMONE)

TEST	RESULT	REFERENCE RANGE
<u>HORMONES</u>		
TSH By CLIA Serum	3.110	0.4 - 4.5 µIU/ml

* DONE ON FULLY AUTOMATED CHEMILUMINESCENCE IMMUNOASSAY (CLIA) SYSTEM MAGLUMI 1000 (ITALY) & AUTOLUMO - A 2000 Plus (CHINA)
(TSH Sensitivity : < 0.01 µIU/m)

The concentration in a given specimen, as determined by assay from different manufactures can vary due to differences in assay method & reagent specificity.

INTERPRETATION :-

- 1) TSH values may be transiently altered because of non - thyroidal illness like severe infections, liver disease, renal and heart failure, severe burns trauma & surgery etc.
- 2) Drugs that decrease TSH value e.g.L-dopa, Glucocorticoids. Drugs that increase TSH value. e.g Iodine, Lithium and Amiodaron.
- 3) Pregnancy reference range for TSH :
1st Trimester : 0.10 - 2.50
2nd Trimester : 0.20 - 3.00
3rd Trimester : 0.30 - 3.00

Reference :

Guidelines of American Thyroid Association for the Diagnosis and Management of Thyroid Disease pregnancy and postpartum, Thyroid,2011,21; 1081 - 1125.

ADVICE : ANTI THYROID ANTIBODY IF CLINICALLY INDICATED.

* Note :- All the values are machine specific kindly interpret with normal ranges provided.

END OF REPORT



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Table 1

Intervention Practice	Duration
Prayer	5 min
Surya namaskar	5 min
Trikonasana	2 min
Vimukt trikonasana	2 min
Prushthasana	2 min
Prasaritasana	2 min
Vampad Pavanmuktasana,	2 min
Dakshinapadapavanmuktasana	2 min
Ubhayapadapavanmuktasana	2 min
Mahamudra	2 min
Paschimottanasana	2 min
Pravinasana	2 min
Bhunamanpadmasana 1-2-3,	2 min
Baddhahastapadmasana	2 min
Matsyasana	2 min
Ardhsalbhasana	2 min
Bhujangasan	2 min
Savasana	5 min
Anulom vilom pranayama	15 min
And chandrabhedan	