



A CLINICAL STUDY TO SEE THE EFFECT OF HOMOEOPATHIC MOTHER TINCTURE GYMNEMA SYLVESTRE AS AN ADJUVANT IN THE TREATMENT OF PATIENT WITH TYPE-2 DM AMONG THE AGE GROUP 35-70 YEARS

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ABSTRACT

Diabetes is a metabolic disorder which occurring in world-wide populations, changes in total body carbohydrate, fats and protein metabolism. Gymnema Sylvestre has active compound of gymnemic acid, which play on blood glucose levels. In Ayurvedic system of medicines Gymnema Sylvestre is remedy had used in lowering blood glucose levels, very few research has done in homeopathically, this study to aim Gymnema Sylvestre helps to lowering blood glucose levels or not along with adjuvant treatment in type-2 diabetic patients. It has been used as a combination of other medicine help to management of sugar levels.

Method- It is an open prospective non-randomized Informal study design, carried on Bharati Vidyapeeth Deemed University Homeopathic College & Research Centre, Katraj, and Pune. Patients were selected K/C/O type-2 DM duration within 5 years, along with anti-diabetic medicine, without any complication of DM and blood sugar within control.

Result- The outcome of the study was measured by statistical analysis using "paired-t test". A significant reduction of blood glucose levels fasting, PP, and HbA1C observed in type-2 diabetic patients before and after the interventions. I have seen the study mean of PPBS level is reducing more than the fasting and HbA1c blood glucose levels.

Conclusion- Homeopathic medicine Gymnema Sylvestre mother tincture significant effect in the blood glucose levels in type-2 diabetic patients. Although it is a short-term study further study to be needed in a large population.

KEYWORDS : DM- Diabetes Mellitus, GS- Gymnema Sylvestre, PPBS- Postprandial blood glucose level.

1. INTRODUCTION

Diabetes is a common metabolic disorder occurring in the whole population. It is characterized by Hyperglycemia with disturbances in metabolism of carbohydrate, fats and protein resulting from defects in insulin secretion and insulin action^(1, 2), the long term effects of diabetes include micro vascular and macro vascular complication like- retinopathy, nephropathy, neuropathy.

WHO says type-2 diabetes is more prevalence with 80-95% of the total diabetic population. International Diabetes Federation show that 285 million adults (20 to 79 years) are affected by the disorder in 2010. In 2016 estimate 1.6 million are deaths were directly caused by diabetes and 2.2 million death were attributable high blood glucose in 2025. Current scenario in India shows prevalence of 40.9 million diabetic patients and is expected to rise 69.9 million by 2025⁽³⁾.

Type-2 DM which is characterized by

1. Impaired insulin secretion from the beta-cell.
2. Insulin resistance - cells do not respond the action of insulin.
3. Excessive hepatic glucose production.
4. Abnormal fat metabolism.

The main purpose of this clinical study is determining efficacy of Gymnema Sylvestre on blood sugar levels. Gymnema Sylvestre is a plant found in India, its leaves are called gurmar. It has a sweet suppressing properties. It is a medicinal plant used in the treatment of diabetes.

Drug Name	Gymnema Sylvestre
Common Name	Gurmar
Kingdom	Plantae
Family	Asclepiadaceae

Parts Used	Leaves root and stem.
Proved By	Lt. Col. R.N.

2. METHODS & MATERIALS

2.1 Study Setting:

The Study was done at Bharati Vidyapeeth Homoeopathic Hospital, Pune and Maharashtra. The patient was collected Bharati Vidyapeeth Homoeopathic Hospital Katraj, Pune OPD, IPD and peripheral OPD. (40 – 45) diagnosed cases of type -2 DM should be taken only 30 patient was taken for this study in both sexes, age group in between (35 – 70) years. The medicine Gymnema Sylvestre Mother Tincture purchased from the Bharati Vidyapeeth Homeopathic Hospital, Dhankwadi, Katraj, Pune.

- Batch No-2/UA/HPM/2010
- Mfd: 2020 January
- Exp: 2024 December.

2.2 Study Design:

It is an open prospective non-randomized Informal study design, carried on Bharati Vidyapeeth Homeopathic Hospital for 18 months. The patient with informed and enrolment with the consent to be done.

2.3 Selection Of Samples:

- Sample Selected 30 cases of type-2 Diabetes Mellitus patients.
- Both sexes.
- Among the age group 35-70 years.
- Fulfillment all the inclusion and exclusion criteria.
- The patients enrolled for the study at OPD and IPD and various rural and urban camp series of foundation Bharati Vidyapeeth Homeopathic Hospital.

2.4 Inclusion Criteria:

- The sample of both gender aged from 35 -70 years.
- HbA1c (6 -9) % even after taking anti-diabetic medicine.
- Fasting Blood Sugar-120-170 mg/dl
- Post Prandial Blood Sugar 200-250 mg/dl
- Only diagnosed cases of type -2DM.
- Along with allopathic anti-diabetic medicine orally.
- Cases who are willing to take the treatment regularly and co-operate and regular follow up.

2.5 Exclusion Criteria:

- Cases below 35 years and above 70 years not included in the study.
- Cases have any other chronic disease and longtime treatment of any chronic ailments.
- Cases with type-1 DM.
- Cases with complication of DM like-Diabetic neuropathy, nephropathy and retinopathy, not included in this study.

2.6 Selection of Tools:

- Diagnosed cases of TYPE-2DM
- Duration within 5 years
- Past History –if any
- Patient continue taking anti-diabetic medicine
- Drug History & Duration of taking anti-diabetic medicine
- Sugar under control& Not control
- Vitals are taken:
- BP-
- Pulse-
- Weight-
- Clinical Examination and necessary investigation (HbA1c) %, Fasting & PP according to the requirement of the case.

2.7 Intervention:

- Gymnema Sylvestre Homeopathic Mother Tincture given 1 drop per kg body weight after 15minute breakfast, Lunch and Dinner orally.
- Drug administration through oral root.
- Drug dispensing: Drugs will be dispensing in distilled water.
- Storage: Medicine will be store in Bharati Vidyapeeth Homeopathic Pharmacy, Katraj and Pune – 411043.

2.8 Follow up patients:

- Follow up patient 15 days after check the random blood sugar by the use of Glucometer.

2.9 Outcome Assessment:

BSL	Pre-test	Post-test	Difference
Fasting			
PP			
HbA1c %			

2.10. Statistical Techniques and Data Analysis:

The data was analyses statistically by the use of paired t-test

3. RESULTS AND DISCUSSION

A Total 33 diagnosed cases of type-2 Diabetes Mellitus patients were selected, out of 33 patients 30 patients were enrolled in my study with investigations fasting, post-prandial and HbA1C blood glucose levels. Before the intervention all 30 patients were diabetic and after the 12 weeks of interventions according to HbA1C levels 7 patients were came to pre-diabetic stage and 23 patients remain diabetic, according to fasting blood glucose levels 17 patients were came to pre-diabetic stage and 13 patients were diabetic, according to post-prandial blood glucose levels 24 patients were came to pre-diabetic and 6 patients were remain diabetic. (Table no: 1).

The Assessing criteria were HbA1c, Fasting, and Post-

prandial blood glucose levels done before and after the intervention. Statistical analysis was done using paired T-test, the mean of HbA1C, Fasting and PP blood sugar levels were reduced after the intervention. Test statistic value of HbA1c, Fasting, Post-prandial 5.15 and p-value (0.000), 10.32 and p-value (0.000), 8.75 and p-value (0.000) respectively is very small, it suggests that we reject H₀ and accept H₁ that is, significant reduction seen in blood sugar level of patient with type -2 Diabetes Mellitus after prescribing of Gymnema Sylvestre. (Table no: 2)

Table. No. 1 Distribution Of Patients According To Hba1c, Bsl Fasting And Bsl- Post Prandial Before And After Treatment

Clinical examination		Before Treatment		After Treatment	
		f	%	f	%
HbA1C	Normal	0	0%	0	0%
	Pre diabetes	0	0%	7	23.33%
	Diabetes	30	100%	23	76.67%
BSL- Fasting	Normal	0	0%	0	0%
	Pre diabetes	0	0%	17	56.67%
	Diabetes	30	100%	13	43.33%
BSL- Post prandial	Normal	0	0%	0	0%
	Pre diabetes	0	0%	24	80%
	Diabetes	30	100%	6	20%

Table. No. 2 Descriptive statistics of blood sugar level measured by HbA1C, BSL-Fasting and BSL-PP of patient with type -2 Diabetes Mellitus before and after prescribing of Gymnema Sylvestre.

	Variable	Mean ± SD	T-value	p-value	Decision
HbA1C	Before treatment	7.88 ± 0.743	5.15	0.000**	Reject H ₀
	After treatment	7.157 ± 1.102			
	Difference	0.723 ± 0.770	Difference is Significant		
BSL- Fasting	Before treatment	146.73 ± 11.95	10.32	0.000**	Reject H ₀
	After treatment	127.57 ± 15.21			
	Difference	19.17 ± 10.17	Difference is Significant		
BSL- Post prandia l	Before treatment	223.77 ± 13.45	8.75	0.000**	Reject H ₀
	After treatment	190.73 ± 21.89			
	Difference	33.03 ± 20.69	Difference is Significant		

Test used: Paired t-test, **: Highly Significant Difference, T-value: Test Statistic value

Type-2 Diabetes is a common metabolic disorder that affects the world wide population. In this study the management of blood sugar level on type-2 Diabetes Mellitus patients with the help of homeopathic medicine Gymnema Silvestre's. There are all in-vivo and in-vitro study had seen Gymnema Sylvestre effect on blood sugar level. So I have selected Gymnema Silvestre's mother tincture which was given clinically on type-2 DM patients. It was a single-arm study with only one group of patients was selected with no control groups. In this study, 33 patients were enrolled (Male and Female) with, diagnosed cases of Type-2 DM within 5 years, between the age group 35-70 years who are on anti-diabetic medication, with controlled blood sugar levels without any complications. Under this study the level of HbA1C is considered in between 6-9% and FBS levels- (120-170) mg/dl and PPBS levels – (200-250) mg/dl, even after taking anti-diabetic medication. Out of 33 patients,

three patients were dropped out from this study with only one or two follow-ups, so total 30 patients had completed this study with proper follow ups. In this study *Gymnema Sylvestre* mother tincture single medicine were administered in Patients of type-2 DM, with proper dosing method, i.e.; one drop/ Kg body weight. Before the intervention of all 30 Patients were diabetic according to HbA1C level (i.e. more than 7 %) and after the intervention 7% patients became pre-diabetic and 23 (76.67) % patients remained diabetic. Before the intervention fasting blood glucose levels of all 30 patients were more than 120 mg/dl and after 12 weeks of intervention, 56.67% patients were changed from diabetic to pre-diabetic state and 43.33% patients were remained diabetic. Before the intervention postprandial blood glucose levels of all 30 patients were in diabetic criteria i.e.; more than 200mg/dl and after treatment 80% patients came to the pre-diabetes stage and 20% remained in diabetic state. So the before treatment all 100% of patients had diabetes but after treatment, the number reduced to 20 % which is significant in my study. The Assessing criteria were HbA1c, Fasting, and Post-prandial blood glucose levels done before and after the intervention. Statistical analysis was done using paired T-test, the mean of HbA1C, Fasting and PP blood sugar levels were reduced after the intervention. Test statistic value of HbA1c, Fasting, Post-prandial 5.15 and p-value (0.000), 10.32 and p-value (0.000), 8.75 and p-value (0.000) respectively is very small, it suggests that we reject H_0 and accept H_1 that is, significant reduction seen in blood sugar level of patient with type -2 Diabetes Mellitus after prescribing of *Gymnema Sylvestre*.

Some limitation which require to be solved in further studies conducted in future like-

- Working on DM with obesity, DM with hyperlipidemia & type 1 DM which were excluded in my study.
- Because of the small sample size, question arises about the generalizability in this study.
- Lack of control group: The study becomes more reliable when we do randomized study with control group, but in present study there was absence of control group.

4. CONCLUSION

I have seen action of *Gymnema Sylvestre* Mother Tincture Homoeopathic Medicine on type-2 DM Patients, Total 33 patients were registered out of which 3 patients did not complete their follow ups. 30 patients were enrolled in the study, *Gymnema Sylvestre* was prescribed according to the weight of the patient, one drop per kg body weight, the duration of the study was three months. The Assessing criteria were HbA1c, Fasting, and Post-prandial blood glucose levels done before and after the intervention. Statistical analysis was done using paired T-test, the mean of HbA1C, Fasting and PP blood sugar levels were reduced after the intervention. Test statistic value of HbA1c, Fasting, Post-prandial 5.15 and p-value (0.000), 10.32 and p-value (0.000), 8.75 and p-value (0.000) respectively is very small, it suggests that we reject H_0 and accept H_1 that is, significant reduction seen in blood sugar level of patient with type -2 Diabetes Mellitus after prescribing of *Gymnema Sylvestre*. It is a unique study to see the effect of *Gymnema Sylvestre* clinically on type-2DM patients.

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