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Research Article

EFFECT OF ABROMA AUGUSTA MOTHER TINCTURE IN TYPE 2 DIABETES MELLITUS BY ASSESSING BLOOD GLUCOSE LEVELS - A CLINICAL STUDY

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ABSTRACT

Studies using *Abroma Augusta* Mother Tincture have reported beneficial effect from treating in Type 2 diabetes mellitus. Diabetes mellitus is a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin. There is disturbance of intermediary metabolism mainly manifesting as chronic hyperglycemia. Diabetes Mellitus is a global health problem that is often treated with homeopathy. **Objective:** The objective of this review will be to evaluate the effectiveness of homeopathic medicines in Type 2 diabetes mellitus with *Abroma Augusta* Mother Tincture. **Material and Method:** Thirty cases of type 2 diabetes mellitus (Diagnosed based on clinical history and investigations). *Abroma Augusta* Mother Tincture prescribed for these cases and follow up every one month up to six months. **Results:** Over a period of 6 months, there was a significant reduction in all the clinical parameters which includes Fasting Blood Sugar (FBS), Post Prandial Blood Sugar (PPBS) in test group with t test ($P=0.0001$) . i.e. *Abroma Augusta* Mother Tincture showed significant effect compared to the placebo group. ANOVA repeated measures also showed significant difference ($P = 0.001$). **Conclusion:** There is a significant reeducation in blood glucose levels in cases of type 2 diabetes mellitus before, during and after with *Abroma Augusta* Mother Tincture.

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INTRODUCTION

Diabetes mellitus is a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin. There is disturbance of intermediary metabolism mainly manifesting as chronic hyperglycemia. WHO recognizes three main forms of diabetes mellitus namely type 1 diabetes mellitus, type 2 diabetes mellitus and gestational diabetes.¹

Type 1 Diabetes Mellitus

Type 1 Diabetes mellitus results from autoimmune beta cell destruction, which leads to insulin deficiency. Individuals with type 1 diabetes mellitus lack immunologic markers indicative of an autoimmune destructive process of the beta cells. However, they develop insulin deficiency by unknown mechanisms and are ketosis prone. Relatively few patients with type 1 diabetes mellitus are in the type 1B idiopathic category; many of these individuals are either African American or Asian in heritage. Type 1 diabetes mellitus most commonly develops before the age of 30, an autoimmune beta cell destructive process can develop at any age. It is estimated that between 5 and 10% of individuals who develop diabetes mellitus after age 30 have type 1 diabetes mellitus.^{2,3}

Type 2 Diabetes Mellitus

Type 2 Diabetes mellitus is a heterogeneous group of disorders characterized by variable degrees of insulin resistance, impaired insulin secretion, and increased glucose production. Distinct genetic and metabolic defects in insulin action and/or secretion give rise to the common phenotype of hyperglycemia in type 2 diabetes mellitus. Distinct pathogenic processes in type 2 diabetes mellitus have important potential therapeutic implications, as pharmacologic agents that target specific metabolic derangements have become available. Type 2 diabetes mellitus is preceded by a period of abnormal glucose homeostasis classified as impaired fasting glucose (IFG) or impaired glucose tolerance (IGT). Type 2 diabetes mellitus more typically develops with increasing age, but it also occurs in children, particularly in obese adolescents.⁴

Other Types

Genetic defects of beta cell function, Genetic defects of insulin action, pancreatic disease, Excess endogenous production of hormonal antagonists, Drug induced, viral infections, uncommon forms of immune mediated diabetes associate with genetic syndrome. e.g.: Down's syndrome.

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Gestational diabetes

Gestational diabetes, defined as hyperglycemia diagnosed for the first time in pregnancy, is a common problem. It occurs in individuals who have an inherited predisposition to develop diabetes and may take the form of either type one and type two diabetes mellitus.⁵

Pathogenesis: Whatever may be the type of diabetes either it is type 1 or type 2 there will be lack of insulin absolutely or relatively. This lack of insulin brings about two important changes namely.³ Decreased anabolism and increased catabolism. Insulin secreted from pancreatic beta cells in to the portal circulation, with a brisk increase in response to a rise in blood glucose (after meals). Insulin lowers blood glucose by suppressing hepatic glucose production and stimulating peripheral glucose uptake, mainly in skeletal muscle and fat, mediated by the glucose transporter, GLUT4. In type 2 diabetes mellitus insulin actions are also impaired by insensitivity of target tissues. While this is a fundamental defect in type 2 diabetes mellitus, hyperglycaemia can also induce insulin resistance through glucose toxicity⁶⁻⁸

Clinical presentation

Hyperglycemia presents with a wide range of symptoms out of them classical features are as follows. Polyuria, Thirst and dry mouth, Nocturia with increased frequency, Tired and fatigue, Recent change in weight, Blurring of vision, Pruritus vulvae and balanitis, Genital candidiasis, Nausea and headache, Hyperphagia (polyphagia), Increased predilection to sweets, Mood changes, irritability and Difficulty in concentration and apathy. Many of these features are interrelated and end with features which follow the process. Tired and fatigue, Recent change in weight, Blurring of vision, Pruritus vulvae and balanitis, Genital candidiasis, Nausea and headache, Hyperphagia (polyphagia), Increased predilection to sweets, Mood changes, irritability, Difficulty in concentration and apathy. Many of these features are interrelated and end with features which follow the process.⁹

Complications: Acute complications are Hypoglycaemia, ketoacidosis or non ketotic hyperosmolar coma.

Chronic complication

Chronic renal failure, cardiovascular disease, retinal damage, nerve damage, microvascular damage and these complications may still progress to impotence, poor healing and gangrene sometimes may require amputation.¹⁰⁻¹³

Investigations

Urine testing: For glucose, using dipsticks. Greatest disadvantage is individual variation in renal threshold for glucose, for Ketone bodies using nitroprusside reaction, this is primarily specific for acetoacetate. conventionally carried out using tablets, dipsticks for proteins using Dip stick. Presence of proteins indicates some renal pathology, Secondary to diabetes. Blood testing are from serum glucose can be tested at three dimensions Fasting, random, postprandial. Glycated hemoglobin gives us an accurate measurement of glycaemic control. Blood lipid concentration of serum helps in understanding overall metabolic control in diabetic Patients.¹⁴

Homoeopathic Approach

Homoeopathy is based on the principles that disease is a total application of mind and body. Moreover homoeopathy recognizes importance of underlying causes such as genetic and inherited factors as the root of any ailment of the body. Homoeopathic medicine prescribed in such conditions covers those criteria and it is very crucial in management of deep rooted diseases. Concept of disease in homoeopathy is that disease is a total affection of mind and body, the disturbance of the whole organism. Individual organs are not the cause of the illness but the disturbance at internal level (i.e. life force or vital energy). Therefore homoeopathy does not believe in giving different medicines for different afflicted parts of body but rather give a constitutional remedy which will cover the disturbance of the whole person.

When we talk about disease like diabetes, we take in consideration in terms of management rather than cure, this is because dietary measures and daily exercises etc are mandatory along with general management, has a vital role in the cure and management of diabetic patients which not only treats the patients superficially but also drives the symptoms away and heals the patient from within. So undoubtedly one can prove that homoeopathy is the medicine of future. *Abroma Augusta* Mother Tincture, traditional homoeopathic remedy is used clinically to treat people with diabetes. It is reported to have an effect in managing the high blood sugar. Scientific investigations have been reported on the treatment with mother tincture of *Abroma Augusta* Mother Tincture regarding antihyperglycemic activity, antihyperlipidemic activity in animal model.¹⁵

MATERIALS AND METHODOLOGY

Period of study

The clinical study was conducted on the cases available from July 2017 to January 2018.

Sample Size

The sample consisted 30 cases of type 2 diabetes mellitus complaints visiting the Out Patient Department (OPD), In Patient Department (IPD) and peripheral centers of Sri Ganganagar Homoeopathic Medical College and Research center, Sri Ganganagar, Rajasthan, India.

Type of study

These thirty cases were allocated randomly using coin toss method.

Inclusion Criteria

Patients of type 2 diabetes mellitus having stable Blood Sugar levels ≥ 7.0 mmol/l and age between 30 to 60 years.

Exclusion Criteria

Patients of type 2 diabetes mellitus and suffering from Chronic Systemic Diseases.
Smoker.
Chronic Alcoholic.
Diagnosed with glucose-6-phosphatase deficiency.
Allergic to Herbal Medicines.
Excluded those are unable to speak English and Hindi.

Investigations

Regular pathological investigations were done to evaluate the status of disease in patients. Fasting and Post Prandial blood glucose levels were measured on every follow up visit of the patients. Other investigations also done where indicated to patients.

METHOD

30 cases of type2diabetes mellitus complaints were selected as per the inclusion criteria using purposive sample technique. Diagnoses of the cases were made based on relevant clinical history and Fasting Blood Sugar, Post Prandial Blood Sugar values obtained during the first visit according to Current medical diagnosis & treatment guidelines. The *Abroma Augusta* Mother Tincture was prescribed for the above cases and was followed for a period of three months and six months. The data were presented in standardized case record (SCR).

Remedy Used

Abroma Augusta Mother Tincture brought from Homoeopathic Pharmacy, Sri Ganganagar, Rajasthan. This *Abroma Augusta* Mother Tincture was divided in to three parts, given thrice daily mixed with one ounce of water until disappearance of all symptoms. This was calculated from the study conducted by the council on mouse model where it was found that one drop/kg body weigh has therapeutic effect without any toxic effect¹⁶. All patients also advised consultate their family physician regularly. Given special instructions to patients that to take low calorie and high fiber diet with regular physical exercise and yoga. Also given strike instruction that avoid physical and mental stress.

Study design: Non control trial based upon purposive sampling method. The duration of study cases registered between July 2017 to January 2018. Follow up of the cases depend on severity of the signs and symptoms, preferably once in month and later on 3months once.

Follow up and symptomatic assessment

Each follow up was of first month, third month and sixth months according to the guidelines given in standardized case record follow up sheet where each symptom of the patients pertaining to type 2 diabetes mellitus complaints was graded according to the aggravation, amelioration, presence and absence.

An estimation of Fasting Blood Sugar (FBS), Post Prandial Blood Sugar (PPBS) values for each case was done in the beginning before stating *Abroma Augusta* Mother Tincture (homoeopathic treatment). Over the period of time, when a patient came for consecutive follow up, Fasting Blood Sugar and Post Prandial blood sugar values of each patient were estimated again, which was after one month, third month and sixth month of homoeopathic treatment (figure 1).

Statistical analysis

The collected data were analyzed by Mean, SD and ANOVA (analysis of variants).

Research Hypothesis

There is a significant decrease in Fasting Blood Sugar (FBS), Post Prandial Blood Sugar (PPBS) values in type 2 diabetes

mellitus complaints during and after homoeopathic treatment with *Abroma Augusta* Mother Tincture.

Null Hypothesis

There is no significant decrease in Fasting Blood Sugar (FBS), Post Prandial Blood Sugar (PPBS) values in type 2 diabetes mellitus complaints during and after homoeopathic treatment with *Abroma Augusta* Mother Tincture.

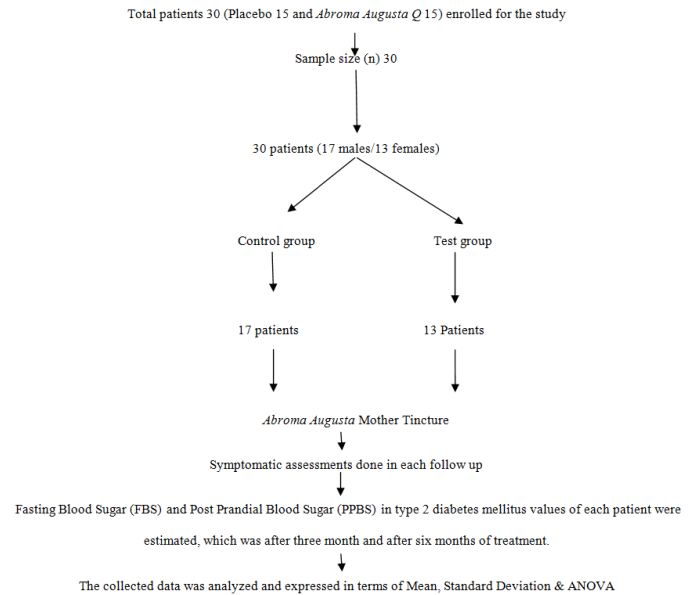


Figure 1 Flow chart: Study design

RESULT

Among 30 Type 2 diabetes mellitus patients with mean ± SD, maximum cases were observed in age group of 30-40 years in 6 (20%) cases, 40-50 years in 8 (26.66%) cases, 50-60 years of age group had 16 (53.33%) cases. Patients were in the male 17(56.66%) and 13 (43.33%) patients were females out of 30 cases. In the research *Abroma Augusta* Mother Tincture was prescribed to the patients according to the symptoms similarity. The following observations were made *Abroma Augusta* is the most effective medicine for the study.

Table 1 Baseline Characteristics

(A) Distribution of cases according to gender

Gender	No. of Cases	Percentage (%)
30-40	6	20.00
40-50	8	26.66
50-60	16	53.33
Total	30	100

(B) Distributions of cases according to age group

Age Group	No. of Cases	Percentage (%)
Male	17	56.66
Female	13	43.33
Total	30	100

(C) Distributions of cases according to Blood Glucose Levels

Blood Glucose	No. of Cases	Percentage (%)
FBS	15	50.00
PPBS	15	50.00
Total	30	100

F.B.S: Fasting Blood Sugar; PPBS: Post Prandial Blood Sugar

Table 2 Blood Sugar (mmol/L) changes in the two groups over different points in time

Groups	Baseline	3 Months	6 Months	F value ^y	P value ^y
Fasting Blood Sugar (FBS)*					
Placebo (n=15)	8.53 ± 0.22	8.14 ± 0.22	7.37 ± 0.22	58.934	<0.001
<i>Abroma Augusta</i> (n=15)	8.42 ± 0.33	6.84 ± 0.44	4.84 ± 0.95	171.486	<0.001
P Value	0.3323 (NS)	0.0001	0.0001		
Post Prandial Blood Sugar (PPBS)*					
Placebo (n=15)	10.68 ± 0.28	10.14 ± 0.35	9.92 ± 0.31	36.398	<0.001
<i>Abroma Augusta</i> (n=15)	10.51 ± 0.38	8.63 ± 0.77	7.62 ± 0.66	83.743	<0.001
P Value	0.1704 (NS)	0.0001	0.0001		

^yRepeated measures ANOVA was carried out with time as factor versus group for showing difference between the groups, ^zIndependent t test was carried out for showing the difference between the groups at each time point. i.e. at 3 months and at 6 months.

DISCUSSION

Among 30 Type 2 diabetes mellitus patients with mean ± SD, maximum cases were observed in age group of 30-40 years in 6 (20%) cases, 40-50 years in 8 (26.66%) cases, 50 - 60 years of age group had 16 (53.33%) cases (Table 1 - A). The study of 30 patients showed a ratio of male to female subjects was 17 and 13 (Table 1- B). Baseline data for control group and Test groups were analyzed on a subject wise basis which has been shown in Mean ± SD baseline control group, Fasting Blood Sugar 8.53± 0.22, *Abroma Augusta* group base line was 8.42± 0.33. P value showed that 0.3323. After 3month in the control group base line was 8.14± 0.20 and *Abroma Augusta* group base line was 6.84± 0.44. P value showed after three month duration the study 0.0001. After six month duration in the control group base line was 7.37± 0.38 and *Abroma Augusta* group was 4.84 ± 0.95. P value showed after six month was 0.0001 (Table 2). Thirty diagnosed cases of diabetes were studied for a period of six months. Fasting Blood Sugar and Post Prandial Blood Sugar levels checked in every 3 month and 6 month (before, during and after the treatment) in mmol/L.

The following observation was made in Mean ± SD baseline control group, Fasting Blood Sugar 10.68± 0.28, *Abroma Augusta* group base line was 10.51± 0.38. P value showed that 0.170441. After 3month in the control group base line was 10.14± 0.35 and *Abroma Augusta* group base line was 8.63 ± 0.77. P value showed after three month duration the study 0.0001. After six month duration in the control group base line was 9.92 ± 0.31 and *Abroma Augusta* group was 7.62 ± 0.66. P value showed after six month was 0.0001 (Table 2). Repeated measures ANOVA was performed comparing data obtained at baseline, at three months and six months, which also revealed significant difference between the two groups, both in Fasting Blood Sugar (F= 58.934); P = 0.001 and Post Prandial Blood Sugar (F =171.486), P = 0.001. Which denotes a significant reduction in all the clinical parameters which includes Fasting Blood Sugar and Post Prandial Blood Sugar at baseline, three months and six months after homoeopathic administration with *Abroma Augusta* mother tincture in type 2 diabetes mellitus (Table 2).

Highly significant reduction in mean values in Fasting Blood Sugar and Post Prandial Blood Sugar levels before 3 month, during and after with *Abroma Augusta* Homoeopathy Mother Tincture. It was observed that out of 30 patient, 18 (60%)

patients were cured, 10 (33%) patients had improvement and 2 (7%) patients showed no response.

CONCLUSION

The research shows that significant reeducation in blood glucose levels with *Abroma Augusta* Mother Tincture. *Abroma Augusta* plays an important role in the treatment of Type 2 diabetes mellitus. There was no side effective during the treatment and it can be concluded that homoeopathic *Abroma Augusta* Mother Tincture can be help the patient to take a new lease on life.

During the study it was observed that in almost all the cases the homoeopathic medicine *Abroma Augusta* Mother Tincture responded well and the patient not only got rid of the main complaints of Type 2 diabetes mellitus but also got rid of the associated complaints with restoration of health. With the help of use of *Abroma Augusta* Mother Tincture even complication was reduced. Thus we can conclude that *Abroma Augusta* Mother Tincture used with holistic approach is very effective in treating the cases of Type 2 diabetes mellitus.

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Limitations

The sample size is small (n=30) and duration only six month.

Financial Support and Sponsorship

Nil.

Conflict of Interest:

None.

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