

A Case report on the effect of an Indigenous Compound Drug *Saptachakradi Choorna* in the Reversal of Early (T2DM)

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ABSTRACT:

Diabetes mellitus (DM) is one of the most common metabolic disorders with alarmingly increasing incidence. The condition is made even more terrifying by its proximity with comorbidities including diabetic retinopathy, diabetic nephropathy, diabetic neuropathy, etc. In Ayurveda, both single drugs and compound formulations are practiced by experienced clinicians for managing DM. Those combinations are to be brought into mainstream practice for the benefit of humanity. Here is the case report of a 42-year-old male patient diagnosed with diabetes mellitus, who was managed with an indigenous compound in the form of *choorna* along with lifestyle modifications for a period of two months. After the intervention, there were significant improvements in the clinical and laboratory parameters of Diabetes mellitus. This indigenous drug not only helped to reverse early DM, but also to the sustainable result in the follow up visit. The indigenous compound contains 5 drugs *Salacia chinensis* (Linn.) (*Saptachakra*), *Centratherum anthelminticum* (Linn.) (*Aranya jeeraka*), *Curcuma longa* (Linn.) (*Haridra*), *Azadiracta indica* (Linn.) (*Nimba*) and *Trigonella foenum graecum* (Linn.) (*Methika*). To the best of our knowledge this is the first attempt to report the effect of the above said combination in the management of newly diagnosed cases of Diabetes Mellitus.

KEYWORDS: Diabetes mellitus, indigenous compound, lifestyle modifications.

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INTRODUCTION:

Diabetes mellitus is a complex metabolic disorder resulting from either insulin insufficiency or insulin malfunction. Diabetes mellitus is one of the most common metabolic disorders with alarming increase in its incidence. Globally, 1 in 11 adults has DM, which means 90% of the population is having T2 DM. India is known as the diabetic capital with almost 72.9 million diabetic people¹. The drastic spike

of the diabetic patients is owed to the sedentary lifestyle, improper sleep pattern, unhealthy dietary habits and stress. As it is highly linked to diet and lifestyle, a total lifestyle modification is highly significant in the management. Diabetes symptoms may include excessive thirst [polydipsia], frequent urination [polyuria], increased appetite [polyphagia], sweating, sudden weight loss and fatigue. If untreated it will lead to several complications like

retinopathy, neuropathy and nephropathy. Pathophysiology and treatment of DM are complex and require a multitude of interventions for successful disease management. In the management of DM, educating the patients regarding disease pathology, diet modification and exercise are critical. In Ayurveda also, *Prameha* is said to have the etiological factors like sedentary lifestyle, improper sleeping pattern and excessive intake of *madhura*, *amla*, *lavana*, *snigdha*, *guru* and *pichila ahara*.

Leading practitioners in Kerala were using drugs as single or in combination form for treating DM and its complications. This is an attempt to report the effect of five such indigenous drugs in powder form given for a period of 2 months in the reversal of DM. Though there are many readily available products in the market, we have not observed any reversal effect of the same in our practice. The uniqueness of this case is that the T2DM could be reversed within a short span, and the result was sustained using this combination. There are different multi-model research works happening over DM, and this is a clinical study to establish the effect of this compound in Diabetes mellitus along with supporting lifestyle modifications.

CASE REPORT:

A clinical case of a 42 year old male patient visited our OPD on 2nd October 2019 with complaints of tiredness and excessive urination for 6 months. He was working as an L.D Clerk with a habit of excess intake of savouries, sweets, rice with curd and fish. He had minimal physical activities and owing to the nature of work he had to sit for prolonged hours. He developed acute dryness of mouth, frequent urination, weakness and heaviness of body, all of which impaired his ability to work efficiently, following which he underwent a

blood examination and was detected to have high values of fasting and postprandial blood glucose. He did not have a familial history of diabetes mellitus. Since the patient refused to take allopathic medications, he sought out ayurvedic treatment.

CLINICAL FINDINGS:

On examination the body weight of the patient was 70 Kg with height 160 cm. BMI was detected to be 27.34. Patient was assessed to have stable vital signs with Blood Pressure 116/82 mmHg. Respiratory rate was 15 per min. and heart rate 70 per min. The two main presenting complaints noted during the case taking were extreme dryness of the mouth coupled with frequent urination and heaviness of body.

DIAGNOSTIC ASSESSMENTS:

Before the patient started taking the medications, fasting and postprandial blood glucose levels were measured. Tests were repeated while the patient was taking the medications (on the 31st and 61st days, as well as after a treatment free period of one month, on the 91st day). HbA1c, a measure of glycosylated haemoglobin, was tested before the initiation of treatment and on day 91.

TREATMENT PROTOCOL:

Indigenous drug compound ➡
Pathya ahara and vihara ➡
Reverse DM

THERAPEUTIC INTERVENTIONS:

Saptachakra popularly known as *Ekanayaka* (*Salacia chinensis*), *Aranya jeeraka* (*Centratherum anthelminticum*), *Haridra* (*Curcuma longa*), *Nimba* (*Azadiracta indica*) and *Methika* (*Trigonella foenum graecum*) were collected, cleaned and dried well. 144 gms each of the five drugs were powdered at a time and 720 gms of the *choorna* was

prepared. 12 gms of *choorna* was given in two divided doses along with lukewarm water, 30 minutes before food for a period of 2 months. During the course of treatment no additional oral medications were given. Advice was given to modify the lifestyle of the person in such a way to reduce the intake of *madhura*, *amla*, *lavana rasa-pradhana* and *abhishyandi ahara* along with brisk walking for a duration of 30 min daily. Strict adherence to these advice regarding the low calorie diet and exercise was encouraged after the treatment period also.

FOLLOW-UP VISITS INCLUDING FINAL OUTCOME:

Patient was ready for the timely administration of medicine and wholesome food. The patient was adhered to the directions of the physician and his willingness to forbid himself from the wrong dietary pattern was highly appreciable. A total of four visits were there and assessments of FBS and PPBS were done four times i.e. before the trial period, 1 month after the commencement of

medication, after the whole trial period of 2 months and finally after another 30 days of medicine free period. HbA1c was assessed two times, first one before starting the medication and second, three months after commencement of medication.

For a period of 30 days, no medication was given, instead he was advised to continue exercise along with a wholesome diet. HbA1c value was 6.4 % on 1/10/2019 and the test was repeated after the treatment free period of 1 month. The second test was on 1/1/2020 and the value of HbA1c was 5.8 %. Patient strictly followed the regimen advised to him and this made the treatment easier. Significant changes were noticed in the blood glucose values and also the symptoms like increased frequency of micturition, dryness of mouth and heaviness felt in body. There were no adverse effects during the course of treatment. When he came for the fourth visit, sustained changes in blood values as well as the symptoms were observed. Patient was satisfied with the outcome of *Saptachakradi* indigenous medication.

Table -1: Drug Details

<i>Dravya</i>	<i>Rasa</i>	<i>Guna</i>	<i>Virya</i>	<i>Vipaka</i>	<i>Karma</i>
<i>Saptachakra</i>	<i>Kashaya Tikta</i>	<i>Laghu Ruksha Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Mutrasangrahana Kaphasamana Madhumehahara</i>
<i>Aranyajeeraka</i>	<i>Katu Tikta</i>	<i>Laghu Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha vata samana</i>
<i>Haridra</i>	<i>Tikta Katu</i>	<i>Laghu Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Rakta prasdana Mutrasangrahana</i>
<i>Nimba</i>	<i>Tikta Kashaya</i>	<i>Laghu</i>	<i>Seeta</i>	<i>Katu</i>	<i>Raktasodhana Kaphasamana</i>
<i>Methika</i>	<i>Katu</i>	<i>Laghu Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphasamana</i>

Table-2: Blood Investigations:

Test	1/10/2019	1/11/2019	1/12/2019	1/1/2020
FBS	121 mg/dl	102 mg/dl	90 mg/dl	86 mg/dl
PPBS	180 mg/dl	164 mg/dl	132 mg/dl	127 mg/dl
HbA1c	6.4 %			5.8 %

DISCUSSION:

Diabetes mellitus is a disease arising from metabolic dysfunction. Hyperglycemia can be caused mainly due to the deficiency of insulin production by the pancreatic beta cells commonly known as Type 1 DM and due to the insufficiency of the insulin production or the resistance offered by the body to the insulin resulting in higher levels of blood glucose also known as Type 2 DM. The current trends of DM medications focus on controlling and lowering blood glucose levels in the vessels to a normal level. But most of the drugs result in various side effects and serious medical problems during the period of treatment. Therefore, traditional medicines have been used for a long time and play an important role as alternative medicine. Traditional medicine is not only controlling blood glucose, but also correcting the cellular level metabolism (*dathvagni deepanam*). Correction at the root level, helps to prevent the recurrence of DM.

According to the 9th edition of the International Diabetes Federation (IDF) the total adult population in the age group of 20-79 years stands at 463 million who live with diabetes, which is set to increase to 578 million by 2030. This alarming increase shows the need of a root level correction of DM, with an effective, economic natural drug without any side-effects. Thus in the research point of view, the effectiveness of this medication is highly significant.

In Ayurveda DM is correlated with *prameha*, which is considered as one among the *Ashta*

*mahagadas*². *Prameha* is a condition in which a patient passes excess and turbid urine. Acharyas have classified *Prameha* into *Kaphaja*, *Pittaja* and *Vatika* types³ and among them *Kaphaja prameha* with ten different manifestations are entitled based on the characteristic of the urine eliminated. It is a *Tridoshaja* condition with dominance of *Kapha dosha* and the *Dushyas* involved in it are *Meda*, *Mamsa*, *Kleda*, *Shukra*, *Shonita*, *Vasa*, *Majja*, *Lasika*, *Rasa* and *Oja*. *Mala-avarana* can be corrected by internal medications containing *srotosodhaka dravya*. The *Saptachakradi* indigenous compound is proven to be clinically effective and with relatively less adverse effects than other systems of medicine. The first drug in this *choorna*, *Saptachakra* or *Ekanayaka* (*Salacia chinensis*) is having *Madhumehahara* and *Mutrasangrahaniya*³ action. It is otherwise known as *Madhumehaghni*. The drug is of *Kashaya-tikta rasa*, *Laghu Ruksha Tikshna Guna*, *Ushna Virya* and *Katu Vipaka*. By these properties *Ekanayaka* effectively pacifies *kapha* and corrects the *Kledavidhi*. It reduces the urine output and also possesses the property to reduce urine sugar. The extracts of *Salacia chinensis* possess a very effective role in blood glucose modulation⁵. *Aranya jeeraka* or *Vanya jeeraka* (*Centratherum anthelminticum*) is having *Raktasodhana Karma*. It is of *Katu-tikta rasa*, *Laghu Tikshna guna*, *Ushna Virya* and *Katu Vipaka*. *Doshakarma* is *Kapha-vatasamana*⁶. *Haridra* (*Curcuma longa*) is a drug proven beyond

doubt to have action in diabetes mellitus and is widely used as a single drug also. It is of *Tikta-katu rasa*, *Laghu Ruksha Guna*, *Ushna Virya* and *Katu Vipaka*. It possesses *Mutrasangrahaniya*, *Mutravirajaniya*, *Raktaprasadana* and *Raktavardhaka Karma*⁷. It is of great utility in *Prameha*. According to Acharya Susruta *Haridra* is useful for *Pishtameha* which is one among the ten *Kaphaja Prameha*. While analysing the drugs of *Saptachakradi* five drugs, we can clearly find the *kaphahara* as well as *rakta sodhana* action.

The compounds used in this formulation possess *kaphpittahara*, *medo mutravaha sroto sodhaka*, *raktha sodhaka* and *dhatwagni deepana* properties. *Nimba* (*Azadiracta indica*) is a drug of *Raktasodhana* action which is highly useful in *Mutragata vikaras*. *Nimba* is of *Tikta-kashaya rasa*, *Laghu Guna*, *Seeta Virya* and *Katu Vipaka*⁸. It is indicated in *Madhumeha* and *Surameha*. *Surameha* is a type of *Kaphaja Prameha*. Acharya Sushruta specifically indicated this to be used in *Surameha*. The fifth component of this *Choorna* was *Methika* (*Trigonella foenum graecum*) which possesses *Katu rasa*, *Laghu Snigdha Guna*, *Ushna Virya* and *Katu Vipaka*⁹. It is prescribed by experienced clinicians to delay the absorption of glucose from the ingested food. Fenugreek powder is highly effective in type 1 as well as type 2 diabetes and is of statistically significant results based on clinical trials¹⁰.

The individual drugs have proven effects in diabetes, *Saptachakra* or *Ekanayaka* (*Salacia chinensis*) as per the study has the capacity to improve insulin resistance and has increased antioxidant properties¹¹. *Aranya jeeraka* or *Vanya jeeraka* (*Centrathereum anthelminticum*) seeds has the capacity to increase insulin secretion¹². *Haridra* (*Curcuma longa*) is proven to have improved the pancreatic beta cell function, increased insulin sensitivity, mitochondrial

biogenesis and muscle and fat glucose uptake¹³. *Nimba* (*Azadiracta indica*) protects against oxidative damage and preserves pancreatic beta cells integrity¹⁴. *Methika* (*Trigonella foenum graecum*) seed powder delays the absorption of glucose and fatty acids¹⁵. Combined action of the five ingredients might have contributed to correct the disordered glucose metabolism and thus reducing blood glucose values. Noticeable changes were noted in the reported symptoms such as reduction in the increased frequency of micturition, dryness of the throat and heaviness in the body. *Samprapthi vighattana* was attained by the combined effect of the individual ingredients in the form of *choorna* on the *doshic* vitiation along with the measures to correct the erratic lifestyle. Lukewarm water was used as the *Anupana*, four times the quantity of *choorna*. Duration of the prescribed medication needs to be purely dependent upon the improvement in symptoms, blood values and also the age and strength of the patient.

Insulin resistance occurs due to an abnormal insulin molecule, an excessive amount of circulating antibodies and target tissue defects. It may be possible that *Saptachakradi* may have some role against circulating antagonists and on the target tissue defects. The medicines included in the compound have *Tridosha shamaka* and *Rasayana* property. Thus they may have acted at the level of *Rasa*, *Agni* and the involved *Srotas*. Thereby produce a positive response on the whole system especially in the correction of glucose metabolism. Response of the treatment was found better in this individual because of more *kaphaja* attributes in the body constitution. The better prognosis of *Kaphaja prameha* is described in the classics of Ayurveda.

Sedentary lifestyle along with high calorie diet and stress are the main reasons for DM.

This shows that DM not only causes derangements in glucose metabolism, but also influences the fat metabolism. This patient is a typical example of acquired *prameha*. Acharyas explained about advising lifestyle modifications like walking 100 *yojana* and different strenuous works to cure *prameha*. Lack of exercise may be one of the main factors for causing *Prameha* and hence the risk can be reduced by regular exercises. Healthy eating patterns, physical activities and weight control are the centers of any therapeutic program for patients in DM. *Oushada Kala* mentioned here is before food, because the action of the medicine administered during this *Kala* is enhanced due to the empty stomach. If the medicine administered in *Kapha Utklesha kala*, the medicine will not come in contact with *Agni* (digestive fire), and will not be digested properly and effect will be either delayed or reduced. *Anupana*, warm water which is very effective in *kaphaja* condition, to improve *Agni*, to remove *avarana* and to increase the bioavailability of the medication.

CONCLUSION:

The medication used in this case study is purely an experience based formulation and this was an attempt to bring this formulation into mainstream practice. This case report aims to make it beneficial for the suffering population affected with diseases like diabetes mellitus. It can be used for the subjects in the pre diabetic stage and it will help to correct the impending errors in glucose metabolism. Symptomatically the patient has got much improvement. The frequency of micturition has been reduced, excess dryness of the throat also got improved. There was a notable reduction in the values of fasting blood sugar, post prandial blood sugar and glycated haemoglobin. The most important

feature noted was the preventive action of this combination of drugs and this will be a boon to the society if prospective studies are conducted in order to observe its preventive efficacy. It will be a great contribution to the scientific world. Studies for its efficacy on metabolic syndrome are highly appreciable and recommended.

PATIENT PERSPECTIVE:

"Myself was very much fond of sweet edibles. My family members used to remind me regarding the excess intake of such food items on the background of my sedentary type of occupation. But I was not giving much concern towards their advice. Before 4 months I started to develop body heaviness, increased frequency of micturition and also excessive dryness in mouth, inducing me to drink more and more water. My friends could easily identify this change and they advised me to have a lab test for blood sugar. On the very next day of the blood test I came here with faith on the effectiveness of Ayurveda in lifestyle diseases like diabetes. I am very much satisfied with my present status as almost all discomforts got cured and also I could see a highly significant change in the blood values such as FBS, PPBS and HbA1c. The lifestyle modifications which I had to follow were also helpful. I feel more energetic now and that helped me a lot to improve my work effectiveness."

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