

MEDICINAL PLANTS USED BY THE TRADITIONAL HEALERS FOR THE TREATMENT OF DIABETES MELLITUS IN THE DISTRICT OF KAMRUP (R), ASSAM, INDIA

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ABSTRACT

Diabetes Mellitus is a global health problem inspite of much advanced facilities of modern medical sciences. Traditional Medicine has important role in health maintenance, particularly for chronic diseases. Assam has rich tradition of herbal medicine used in the treatment of various ailments and hotspot of bio- diversity and rich in flora and fauna. In the District of Kamrup (Rural) in Assam, different healing practices are used by different group of people for the treatment of different diseases. In order to collect information about the Medicinal Plants used by the Traditional Healer for the treatment of Diabetes Mellitus, attempt has been made to meet the Traditional Healers in the District of Kamrup (Rural) in Assam during the period May, 2013 to April, 2015 and recorded 10 (ten) nos. of Medicinal Plants used for the treatment of Diabetes Mellitus.

Keyword: Medicinal Plant, Diabetes Mellitus, Traditional Healer

INTRODUCTION

Traditional medicines used by the Traditional Healer, is one of the vital tools for maintaining health and cure ailments for a large population of many countries. It has been found that the use of Traditional Medicine has important role in health maintenance and in disease prevention and treatment, particularly for chronic diseases. WHO therefore defines traditional medicine as including diverse health practices, approaches, knowledge and beliefs incorporating plant, animal, and/or mineral based medicines, spiritual therapies, manual techniques and exercises applied

singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illness.¹

Inappropriate use of traditional medicines or practices can have negative or dangerous effects and that further research is needed to ascertain the efficacy and safety of several of the practices and medicinal plants used by Traditional Medicine Systems. WHO has already under taken strategy for promoting safe and effective use of Traditional Medicine through the regulation, research and integration of Traditional Medicine products, practices and practitioners into the health system, as appropriate².

The incidence of this disease “Diabetes Mellitus” is increasing day by day due to change of dietary habit, socio-economical status, stress and sedentary life style. According to the latest International Diabetic Federation (IDF) figures, the total world population (20 – 79 years) is 4.84 billion (2017). Among them, 424.9 million (2017) people are living with Diabetes and it is estimated to rise 628.6 million in 2045. As per record, number of death due to Diabetes is 4.0 million in 2017 and number of live births affected is 21.3 million (2017) due to hyperglycemia in pregnancy (20-49 years)³.

The disease Diabetes Mellitus is a metabolic disorder characterized by hyperglycaemia resulting from defects in insulin secretion, insulin action or both and needs regular antidiabetic medicines or measures to control the blood sugar. It is a chronic disease, caused by inheritance and/or acquired deficiency in production of Insulin by the Pancreas or ineffectiveness of the Insulin produced. The increase concentration of glucose in blood (hyperglycemia) for a long period, lead to serious damage to many body’s system specially nerve and blood vessels, produces major complication like Cardio Vascular Ailment, Cerebrovascular Accidents, Renal Insufficiency, Blindness, Sexual Impotency and Gangrene of the feet etc. and it becomes a global health problem inspite of much advanced facilities of modern medical sciences.

The prevalence of Diabetes Mellitus in the state of Assam is also not less. According to a study⁴, the prevalence of Diabetes Mellitus (aged 20 years or older) is 12.4 % (Urban area) and 4.4 % (Rural area) as samples collected between 5th Jan, 2012 and 3rd July, 2015.

Assam has rich tradition of herbal medicine used in the treatment of various ailments. Some, individual have become specialized to prepare the medicine from the plants owing to prolong practical experience. The treatment or medicine used by the traditional healers are generally transmitted mouth to mouth through a community, family and individual until collected the knowledge, diffusely scattered.

The State is the hotspot of bio- diversity and rich in flora and fauna. The people of this area inhabit in a

multiethnic, multilingual and multi religious society. Many groups of people believe, rely and depend on traditional system of medicine in many places of this region for getting relief from different diseases.

Survey is one of the essential steps prior to a new discovery. This process guides us to achieve the expected goal. Besides these it also help in bringing out new informations, innovative ideas and proper planning. The survey can be conducted faster and cheaper way for collection of primary data. The primary data gathered together may be undertaken for further analysis easily.

The district Kamrup (Rural) of Assam consist of wide plains through which the mighty river Brahmaputra makes its way flowing a steady course from east to west and the district also covered some hilly area where different ethnic groups of people are inhabited. The demographic pattern of the district is heterogeneous one, multi cultured people are living in the district. The main tribes are Rabha, Boro, Karbi, Garo and Khasi and non tribal community lives in the district. Some area under this district is Muslim predominant. Different healing practices are used by different group of people for the treatment of different diseases.

MATERIALS & METHOD:

In order to collect information about Medicinal plants used by traditional healer for the treatment of Diabetes Mellitus intensive field work was under taken in the district Kamrup (Rural) of Assam covering different season from May,2013 to April,2015. The information about traditional healer had been collected from different groups of people at many level and met the traditional healers with prior permission. Different library collection and research publication available in the library of Govt. Ayurvedic College, Guwahati, Assam and Gauhati University, Guwahati, Assam, were also used for collection of information.

Total 6 (six) nos. of Traditional Healers who are treating Diabetes in the district of Kamrup (Rural), Assam, had been found and face to face interviewed with them separately for collecting the information as per questionnaire prepared for the purpose.

The medicinal plants used by the Traditional Healers had been collected in flowering & fruiting stage as far as possible its natural habited and serially tagged with collection number, date, etc. along with photograph. Thorough observation had been made of the individual plant species and recorded the morphological character. The useful part of the plants and vernacular name etc. were documented. The herbariums were prepared of plants by maintaining all necessary procedure and technique for proper identification.

AUTHENTICATION OF THE MEDICINAL PLANTS:

TABLE 1: IDENTIFICATION OF MEDICINAL PLANTS BY THE BOTANY DEPARTMENT, GAUHATI UNIVERSITY, GUWAHATI, ASSAM, INDIA

Sl. No.	Name of the Species	Family	Collection No.	Accession No.
1	<i>Phlogacanthus thyrsoiflorus</i> Nees	Acanthaceae	B ₃	GUBH18511
2	<i>Glycosmis pentaphylla</i> (retz.) DC.	Rutaceae	A ₁	GUBH18514

TABLE 2: THE LIST OF MEDICINAL PLANTS AND ITS PART USED BY THE TRADITIONAL HEALER FOR THE TREATMENT OF DIABETES MELLITUS

Sl. No.	Name of the Medicinal Plant	Part/Parts used by the Traditional Healer.
1	<i>Salmalia malabarica</i> (DC.) Scott & Endl	Sepal
2	<i>Cyperus rotundus</i> L.	Rhizome
3	<i>Clitoria ternatea</i> L.	Leaf
4	<i>Mimosa pudica</i> L.	whole plant
5	<i>Citrus limon</i> (L.) Osbeck	Fruit peel
6	<i>Aegle marmelos</i> (L.) Correa	Leaf
7	<i>Syzygium cumini</i> (L.) Skeels	Bark
8	<i>Glycosmis pentaphylla</i> (retz.) DC.	Leaf
9	<i>Punica granatum</i> L.	fruit peel
10	<i>Phlogacanthus thyrsoiflorus</i> Nees	Leaf

RESULT AND DISCUSSION

In the district of Kamrup (Rural) in Assam 6 (Six) nos. of Traditional Healer were found who are treating

All the Medicinal Plants collected from the Traditional Healers are mentioned in the Ayurvedic Classics and these all are existed in the Botanical Garden of Govt. Ayurvedic College, Guwahati, Assam, India, which are already identified. So, these have been identified by the Dept. of Dravyaguna, Govt. Ayurvedic College, Guwahati, Assam, India. However, the plant *Glycosmis pentaphylla* and *Phlogacanthus thyrsoiflorus* are not mentioned in the Ayurvedic Classics. So, both the species of Medicinal Plants are identified by the Botany Department, Gauhati University, Guwahati, Assam, India, as follow –

the Patient of Diabetes Mellitus and the following Medicaments/Medicinal Plants are used for the treatment.

TABLE 3: THE MEDICAMENTS/MEDICINAL PLANTS USED BY THE TRADITIONAL HEALER FOR THE TREATMENT OF DIABETES MELLITUS

Traditional Healers with location.	Medicament/Medicinal Plants used	Procedure of Use	Result of the Treatment
Traditional	The Sepal of <i>Salmalia</i>	Collected the required part from	Almost 1 to 3 patients in a week are

Healer-1 Uparbari, Amingaon, Guwahati- 31, Kamrup (Rural), Assam.	<i>malabarica (DC.) Scott & Endl.</i>	natural habitat. Dried properly and make powder separately each. Then all powder drugs are mixed together properly and use for the treatment of Diabetes Mellitus. The therapeutic dose is 2 tsf daily in empty stomach for 3 days in a week for 3 weeks such. It may be more according to condition of the patient.	treated by the Traditional Healer. Some of them come for repeated vistingation. The result of the treatment is good as reported by the Traditional Healer. Moreover, no any harmful effect of the treatment has been observed during his tenure of treatment as informed by him.
	Rhizome of <i>Cyperus rotundus L.</i>		
	Leaves of <i>Clitoria ternatea L</i>		
	<i>Mimosa pudica L.</i> (whole plant)		
Traditional Healer-2 Amingaon, Assam Tube Colony, Guwahati-31, Assam.	Peel of <i>Citrus limon (L.) Osbeck</i>	5 gram Peel of <i>Citrus limon</i> is given orally with 250 ml cow's milk daily in the morning. The milk should be fresh, just after milking, milk should be used.	The Traditional Healer advise all the people who are suffering from Diabetes Mellitus and all the Diabetics are getting benefit by him and get relief from the Diabetis Mellitus as reported by him.
	Cow's milk (Fresh milk without boil just after milking).		
Traditional Healer-3 Rani Chowk, Kamrup (R), Assam.	Leaves of <i>Aegle marmelos (L.) Correa.</i>	The leaves of the <i>Aegle marmelos</i> are collected from natural habitat. Dried properly and make powder. The dose is given ½ tsf with 1 tsf bark juice of <i>Syzygium cumini</i> orally in the evening daily for 3 months or more according to condition of the disease.	Usually 2 to 3 patients per month are treated by him. The results are very good as reported by him and no side effect has been observed by him as reported.
	Bark of <i>Syzygium cumini (L.) Skeels</i>		
Traditional Healer-4 Sualkuchi, Adabari Path, Kamrup (R), Assam.	Leaves of <i>Glycosmis pentaphylla (retz.) DC.</i>	Patient is advised to prepare decoction of the dried leaves. 20 ml of the decoction is given in the morning empty stomach and at bed time for 3 months or more according to codition of the disease.	Number of patients is 3 to 7 per week. He record blood sugar report of the patient. The result of the treatment is good as reported. He also claims that all condition along with the Diabetes Mellitus is cured by his treatment.
Traditional Healer-5 Kaymari, Chaygaon, Kamrup(R), Assam.	Fruit Peel of <i>Punica granatum L.</i>	The fruit peel of <i>Punica granatum</i> are dried properly and make powder. The dose is given 1 tsf with 1 cup of warm water orally morning and evening daily for 1 month or more according to condition of the disease.	Only 1 to 2 numbers of patients per moth are treated by him. The result of the treatment is good as reported by him.
Traditional Healer-6 1 No. Kishmat Bangshar, Sualkuchi, Kamrup (R) , Assam	Leaves of <i>Phlogacanthus thyrsoiflorus Nees.</i>	The leaves of the <i>Phlogacanthus thyrsoiflorus</i> are collected from natural habitat. Dried properly and make powder. The dose is given 1 tsf daily with hot water for 4 weeks or more according to condition of the disease.	3 to 6 patients per week are treated by him. The result of the treatment is good as reported by him. Moreover, no any side effect has been observed during his tanure of treatment.

It is also found that the Known case of Diabetes Mellitus is mostly treated by all of them as reported. All of them use fresh Medicinal Plants collected by themselves from authentic sources. The Traditional Healer do not want to disclose about the treatment or drug used for treatment. They believe that the treatment will not be fruitful or successful if they disclose the medicines used for the purposes. So, some of the Traditional Healer refused to share their knowledge. In this situation, effort had been made for collection of the drugs by repeated visitation with the help of local people who are close to them. Ultimately, the information were collected. After detail study, total 10 (ten) nos. of Medicinal Plants have been recorded which are used for the treatment of Diabetes Mellitus and the treatment given by the Traditional Healers for Diabetes Mellitus are found effective. It is found in different classics and different experimental study done by different scholars that the sepal of *Salmalia malabarica*⁶, rhizome of *Cyperus rotundus*⁷, leaves of *Clitoria ternatea*⁸, *Mimosa pudica* (whole plant)⁹, peel of *Citrus limon*¹⁰, leaves of *Aegle marmelos*^{11,13}, bark of *Syzygium cumini*^{12,13}, leaves of *Glycosmis pentaphylla*¹⁴, fruit Peel of *Punica granatum*¹⁵ and leaves of *Phlogacanthus thyrsoflorus*¹⁶ are having antidiabetic property.

CONCLUSION

The drugs used by the Traditional Healer in the District of Kamrup (Rural), Assam, for the treatment of Diabetes Mellitus are safety and effective. Moreover, no record has been found about the side effect or adverse effect of the treatment given by Traditional Healer.

Traditional Healers collect drugs from original sources which are authentic. Moreover, they are highly acquainted with Medicinal Plants. The Traditional Healers are very popular in the society and people can meet them easily for their treatment. People are benefited by the traditional Healers.

All the drugs as mentioned above used by the Traditional Healers, are having hypoglycemic activity as per the scientific data of experimental study as reported by different Scholars.

With the above information, further study may be done to analysis and isolation of molecule which may be more effective for the treatment of Diabetes Mellitus.

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