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Pharmacological Review of Diabetes Mellitus (Madhumegam) in Siddha Medicine



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ABSTRACT

Diabetes Mellitus is a non Communicable disease which occurs due to lifestyle disorder like stress and physical inactive. This is the most commonest disorder in worldwide which developed after industrialization in modern world[5]. This is a group of multifactorial disease which is associated with other diseases like hypertension and so on along with increase blood glucose level[1] through Diabetes Mellitus is considered as incurable disease it can be reduced, controlled and prevented by some natural herbals. Among the Indian systems of medicine, our ancient traditional Siddha system gives a safe remedy. The aim of the review is to recall the role of Siddha system of medication on Diabetes Mellitus. This prevention taller about variety of Antidiabetic herbal and hypoglycemic action herbal which may control Diabetes Mellitus. This can be managed by personalized exercise, stress reduction medication. Strict diet and also by changing lifestyle.

INTRODUCTION

Diabetes Mellitus is a chronic disease and represents a spectrum of metabolic disorder. Diabetes is considered as a third killer disease after cancer and cardiovascular disease. It is the most common endocrine disorder and constitutes a major health problem in Noncommunicable disease. It is the heterogeneous metabolic disorder characterized by altered Carbohydrates, lipids and protein metabolism resulting in either insulin insufficiency or insulin dysfunction[2]. It is characterized by hyperglycemia and also associated with microvascular, macrovascular and neuropathic complications. It has emerged as a major health issue in world. It is a fast growing global problem in huge, social health and economic consequences. The rate of increase Diabetes Mellitus is 333/1000/year [3]. In 2019 approximately 463 million adult (between 20-79 years) were living with diabetics [4]. The greatest numbers of people with diabetics are found between age of 40-59 years.

In modern medicine, drug therapy does not plays a sufficient role in Diabetes Mellitus. So the people used to go for natural, safe and herbal remedies like Siddha. Though Diabetes Mellitus is considered as incurable disease it can be treated, reduced and controlled by Siddha system of medicine. People all over the world are in search of harmless and safe remedies to chronic diseases. As India is the captial of Diabetes Mellitus. Our Siddha medicine of system plays a very important role in controlling Diabetes Mellitus. In India Diabetes Mellitus can be treated by herbal with actions of Antidiabetic and anti hypoglycemic activity. Some of such precious herbal gifted for Diabetes Mellitus by god one Kadukai, Nelli, Karivepilai, Sennhill, Naaval, Kooraikilangu, KellaNelli, Avarai, thanrikai, kondrai, kostam, maruthamand so on [6].

DIABETES MELLITUS

It is a group of chronic disease associated with abnormally high level of the sugar glucose in the blood along with inadequate production of insulin or inadequate sensitivity of cells to the action of insulin [7, 8].

MADHUMEGAM

Madhumeagam is a clinical condition characterized by frequent and excessive passage of urine with 'Sweetness' eventually leading to determining of Seven body constitutions (Eluudalkattukal) [9].

CLASSIFICATION

DIABETES MELLITUS

According to modern concepts, it is 2 types based on its therapy.

- Type 1 Diabetes Mellitus
- Type 2 Diabetes Mellitus [10]

MADHUMEGAM

According to Yugivaithiyachinthamani Meganoi is classified into 20 types under 3 heading [11,12].

- Vatham type 6
- Pitham type 4
- Kapham type 10

SIGNS AND SYMPTOMS [13, 14]

- Excessive thirst and hunger
- Frequent urination (from Urinary Tract Infection or Kidney problem)
- Weight loss or gain
- Fatigue
- Irritability
- Blurred vision
- Slow healing wounds
- Nausea
- Skin infection
- Darkening of skin in area of body



- Tingling or numbness in hands

COMPLICATIONS [15,16]

ACUTE

- Diabetic Ketoacidosis
- Hyperglycemia
- Hyperglycemic Hyperosmolar Syndrome (HHS)

CHRONIC

- Nephropathy
- Neuropathy
- Retinopathy

MODERN DRUGS COMPLICATIONS [17]

- Sulfonylureas: upset stomach, skin rash or itching, weight gain.
- Metformin: kidney complications, tiredness, dizziness.
- Alpha glucosidase inhibitors: diarrhea
- Meglitimides: weight gain, low blood sugar.

SIDDHA HERBAL DRUGS FOR DIABETES MELLITUS

- ✓ Madhumegachooranam[18]
- ✓ Aaverai Kudineer[19]
- ✓ Seenthil Sarkarai[20]
- ✓ Naval kottaichooranam[21]
- ✓ Triphalachooranam[22]

MADHUMEGA CHOORANAM

INGREDIENTS

Kadukai (*Terminalia chebula*. Retz), Nellikai (*Phyllanthus emblica*. Linn), Karivembu (*Murraya koenigii*. Linn), Seenthil (*Tinospora cordifolia*. Miers), Naval (*Syzygium cumini*. Linn), Koorai kilangu (*Cyperus rotundus*.Linn), Kelkaaineli (*Phyllanthus amarus*. Linn)

METHOD OF PREPARATION

The following ingredients should be taken in required quantity. Make sure that the drugs are purified. The purified drugs should be grained into fine powder with the help of idikaruvi. These fine powder should be sieved to get a perfect chooranam.

PHYTOCHEMICAL AND PHARMACOLOGICAL ACTIVITY OF MADHUMEGA CHOORANAM

S. No	NAME OF INGREDIENTS	PARTS USED	PHYTOCHEMICALS	PHARMACOLOGICAL ACTIVITY
1.	Kadukai (<i>Terminalia chebula</i> . Retz) Fam: Combretaceae	Fruit	Alkaloid, rutins, flavonoids, terpenoids, tannin, luteolin, quercetin, corilagin, saponins, chebulinic acids. [23]	Antiviral, wound healing, Anti diabetic, cytotoxic, anti ulcer, antioxidant, antifungal, Antibacterial, anticancer. [24]
2.	Nellikai (<i>Phyllanthus emblica</i> . Linn) Fam: Euphorbiaceae	Fruit	Tannins, saponins, antraquinone, terpenoids, ascorbic acids. [25]	Antimicrobial, antioxidants, Anti-inflammatory, radioproduction, hepatoprotective, hypolipidemic, wound healing, anticancer, antidiabetic.[26]
3.	Karivembu (<i>Murraya koenigii</i> . Linn) Fam: Rutaceae	Leaf	Phenols, tannins, terpenoids, amino acid, alanine, leucine, cadinene. [27,28]	Antibacterial, antioxidant, vasodilating, antidiabetic, Anti ulcers, anti diarrhea, phagocytic, analgesic, cardiovascular. [29]
4.	Seenthil (<i>Tinospora cordifolia</i> . Miers) Fam: Ascelpiadeceae	Stem, Bark	Alkaloids, Cardiac glycoside, flavonoids, phenols, amino acid, saponins, tannins, steroids. [30]	Antispasmodic, antimalarial, anti inflammatory, anti arthritic, antioxidant, anti allergic, antileprotic, antineoplastic, wound healing. [31]
5.	Naval (<i>Syzygium cumini</i> . Linn) Fam: Myrtaceae	Seed/ Fruit	Gallic acid, tannins, Beta-sitosterol, myricyl alcohol, gallitanins, flavonoids, glycosides,	Antidiabetic, anticancer, antioxidant, antimicrobial, anti-inflammatory, anti diarrheal, antiviral, gastroprotective, anti

			steroids, saponins, resins, carotenoids. [32]	fertility, Antibacterial, chemoprotective.[33,34]
6.	Korai (<i>Cyperus rotundus</i> . Linn) Fam: Cyperaceae	Rhizome	Pectins, tannin, ascorbic acid, Betaselinene, cyperotundone, pectin, sugenol, sitosterol[35,36]	Anti diabetic, anti diarrheal, cytoprotective, antimutagenic, antipyretic, antiemetic. [37]
7.	Kelkaaineli (<i>Phyllanthus amarus</i> . Linn) Fam: Euphorbiaceae	Leaf	Isobubbialine, securinine, geraninin, corilagin, amarulone, phyllanthin, hypophyllanthin, 1, 6, digalloylglucopyvanosid [38]	Antibacterial, Anti diabetic, antiviral, anti-inflammatory, lithiosis, antiplasmoidal, antioxidant. [39]

AAVERAI KUDINEER

INGREDIENTS

Aaverai (*Cassia auriculata*. Linn), Kondrai (*Cassia fistula*. Linn), Kadalazhinjil (*Salacia reticulata*. Wight), Naval (*Syzygium cumini*.Linn), Kostham (*Costus speciosus*.Sm), Korai (*Cyperus rotundus*.Linn), Marutham (*Terminalia arjuna*.Arn)

METHOD OF PREPARATION

The following ingredients should be taken in required quantity. Make sure that the drugs are purified. The purified drugs should be grained into fine powder with the help of idikaruvi. These fine powder should be sieved to get a perfect chooranam.

PHYTOCHEMICAL AND PHARMACOLOGICAL ACTIVITY OF AAVERAI KUDINEER

S. No	NAME OF INGREDIENTS	PARTS USED	PHYTOCHEMICALS	PHARMACOLOGICAL ACTIVITY
1.	Aaverai (<i>Cassia auriculata</i> . Linn) Fam: Ceasalpinaceae	Whole plant	Tannins, flavonoids, saponins, terpenoids, alpha tocopherol. [40]	Antidiabetic, hepatoprotective, antioxidant, anti tumor, antipyretic. [41]
2.	Kondrai (<i>Cassia fistula</i> . Linn) Fam: Ceasalpinaceae	Bark, leaves	Flavonoids, lupenol, saponins, tannins, triterpenoid. [43]	Antidiabetic, hypolipidemic, hepatoprotective, antioxidant, anti inflammatory, antimicrobial, anti tumor, Antiulcers. [42]
3.	Kadalazhinjil (<i>Salacia reticulata</i> . Wight) Fam : Celasteraceae	Whole plant	Salacinol, kotanalol, salaretin, quercetin. [44]	Antimicrobial, Antibacterial, Anti rheumatic, anti diabetic, hepatoprotective, antiproliferative.
4.	Naval (<i>Syzygium cumini</i> . Linn) Fam: Myrtaceae	Seeds	Flavanoid, myrivetin, ellagic acid, tannin, jambosine, jamboline. [45]	Anti cancer, antioxidant, anti inflammatory, anti fertility, antitumour, Antibacterial antidiabetic, chemoprotective. [46]
5.	Kostham (<i>Costis speciosa</i> . Sm)	Rhizome	Eremantin, triterpenoid, saponins, beta sitosterol. [49]	Antidiabetic, anticancer, antimicrobial, anti-inflammatory, antioxidants.
6.	Korai (<i>Cyperus rotundus</i> . Linn) Fam: Cyperaceae	Rhizome	Tannin, ascorbic acid, Beta selinene, flavonoids cyperotundone, pectin, sugenol, sitosterol [47]	Anti diabetic, anti diarrheal, cytoprotective, antimutagenic, antipyretic, antiemetic, analgesic [48]
7.	Marutham (<i>Terminalia arjuna</i> . Arn) Fam: Comberataceae	Bark	Flavonoids, tannins, triterpenoid, saponins, arjunolic acids, arjunic acid, arjungeninjut colin.	Hepatoprotective, antioxidant antimicrobial, antidiabetic, antianthelmic [50].

SEENTHILL SARKARAI

INGREDIENT

Seenthil (*Tinospora cordifolia*. Miers)

METHOD OF PREPARATION

The following ingredients should be taken in required quantity. Make sure that the drugs are purified. The purified drugs should be grained into fine powder with the help of idikaruvi. These fine powder should be sieved to get a perfect chooranam.

PHYTOCHEMICAL AND PHARMACOLOGICAL ACTIVITY OF SEENTHIL SARKARAI

S. No	NAME OF INGREDIENT	PARTS USED	PHYTOCHEMICAL	PHARMACOLOGICAL ACTIVITY
1.	Seenthil (<i>Tinospora cordifolia</i> . Miers) Fam: Asclepiadeceae	Bark, Stem	Alkaloids, Cardiac glycoside, flavonoids, phenols, amino acid, saponins, tannins, steroids. [30]	Antispasmodic, antimalarial, anti-inflammatory, anti arthritic, antioxidant, anti allergic, antileprotic, antineoplastic, wound healing. [31]

NAVAL KOTTAI CHORANAM

INGREDIENT

Naval (*Syzygium cumini*. Linn)



METHOD OF PREPARATION

The following ingredients should be taken in required quantity. Make sure that the drugs are purified. The purified drugs should be grained into fine powder with the help of idikaruvi. These fine powder should be sieved to get a perfect chooranam.

PHYTOCHEMICAL AND PHARMACOLOGICAL ACTIVITY OF NAVAL KOOTAI CHOORANAM

S. NO	NAME OF INGREDIENTS	PARTS USED	PHYTOCHEMICAL	PHARMACOLOGICAL ACTIVITY
1.	Naval (<i>Syzygium cumini</i> . Linn) Fam: Myrtaceae	Seeds, Fruit	Gallic acid, tannins, Beta-sitosterol, myricyl alcohol, gallitanins, flavonoids, glycosides, steroids, saponins, resins, carotenoids. [32]	Antidiabetic, anticancer, antioxidant, antimicrobial, anti-inflammatory, anti diarrheal, antiviral, gastroprotective, anti fertility, Antibacterial, chemo protective. [33,34,46]

TRIPHALA CHOORANAM

INGREDIENTS

Kadukai (*Terminalia chebula*. Retz), Nellikai (*Phyllanthus emblica*. Linn), Thanrikai (*Terminalia bellirica*.Roxb)

METHOD OF PREPARATION

The following ingredients should be taken in required quantity. Make sure that the drugs are purified. The purified drugs should be grained into fine powder with the help of idikaruvi. These fine powder should be sieved to get a perfect chooranam.

PHYTOCHEMICAL AND PHARMACOLOGICAL ACTIVITY OF TRIPHALA CHOORANAM

S. NO	NAME OF INGREDIENTS	PARTS USED	PHYTOCHEMICAL	PHARMACOLOGICAL ACTIVITY
1.	Kadukai (<i>Terminalia chebula</i> . Retz) Fam: Combretaceae	Fruit	Alkaloid, rutins, flavonoids, terpenoids, tannin, luteolin, quercetin, corilagin, saponins, chebulinic acids.[23]	Antiviral, wound healing, Anti diabetic, cytotoxic, anti ulcer, antioxidant, antifungal, Antibacterial, anticancer. [24]
2.	Nellikai (<i>Phyllanthus emblica</i> . Linn) Fam: Euphorbiaceae	Fruit	Tannins, saponins, antraquinone, terpenoids, ascorbic acids. [25]	Antimicrobial, antioxidants, Anti-inflammatory, radioproduction, hepatoprotective, hypolipidemic, woundhealing, anticancer, antidiabetic.[26]
3.	Thanrikai (<i>Terminalia bellirica</i> . Roxb) Fam: Combretaceae	Fruit	Glycoside, tannins, gallic acid, ethyl galate, bellericanin. [51]	Anti diarrheal, analgesic, antihypertensive, antimicrobial, wound healing, anticancer, antidiabetic, antioxidant. [52]

SOME OTHER HERBALS

Ashokam, Atti, Alli, Alampattai, Athruthumatti, Inji, Kadalthenkai, Karungali, Kalyanapusani, Kalyanamuruku, Kasirathanam, Kichilipalam, Sarakonrai, Kothumai, Kovai, Thanirvittan,

Thengumaram, Pericham, Thetran, Nanari, Nilapanai, Manisambha, Parangipattai, Pathiri, Pilavaikolli, Piruku, Maruthu, Munthiri, Vallaikodi, Vilamichaveer Vel. [53]

SOME OTHER MINERALS

Ayyarpam, Ayyachendroom, Thanga Chendroom, Kariuppu, Pavalam, Maragatham, Muthu, Abirahagachendroom, Soornaabiragachendroom. [54]

SOME OTHER ANIMAL ORIGIN

Silasathu, Korosanai, Then. [55]

PREVENTION [56]

- Live a healthy lifestyle.
- Concentrate in maintaining a healthy weight.
- Keep away from non communicable diseases like Hypertension, obesity.
- Follow a regular exercise to avoid physical inactivity.
- Avoid smoking, alcohol consumption and drug addiction.

CONCLUSION

Though Diabetes Mellitus is considered as an incurable disease, it can be controlled and prevented by hypoglycemia properties herbs. This review is about hypoglycemic activity of drugs used in Madhumeaga Chooranam, Aaveraikudineer, Sennthill chooranam, Naval kotai chooranam and Triphala chooranam. In this Siddha medicine as all the drugs are with both hypoglycemia activity and antioxidant activity it is very effective in reducing and controlling the diabetes. Though modern drugs show an immediate recovery it's best to follow Siddha medicine because of its safety and permanent control.

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