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## ANTI DIABETIC MEDICINAL PLANTS

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## 1. INTRODUCTION

Diabetes is a world leading disease, 7th leading cause of death, percentage of people suffering from diabetes throughout the world was 9.3% which may increase by the end of 2020. Diabetes is a long-term condition that causes high blood sugar levels over a prolonged period. Diabetes is due to either the pancreas not producing enough insulin or the cells of the body not responding properly to the insulin produced.<sup>1-4</sup>

#### Causes of Diabetes: <sup>5-8</sup>

Genetic makeup, Family history, Ethnicity, Health, Life style and Environmental factors, during pregnancy

#### Consequences of Diabetes: <sup>9-15</sup>

Diabetic dermadromes, Polyuria, Polydipsia, Polyphagia, Fatigue, causing problems in the Eyes, Kidneys, Feet and Nerves , Macrovascular and Microvascular complications

#### Types OF Diabetes: <sup>16-18</sup>

**Type 1 Diabetes-** Insulin-dependent diabetes, juvenile diabetes, or early-onset diabetes.

**Type 2 Diabetes-** Non insulin-dependent diabetes

**Gestational Diabetes** - Affects females during pregnancy

## 2. DISCUSSION

#### Treatment for Diabetes: <sup>19-25</sup>

- **Life style modification:** Diet, Exercise, Stress management, Increased social support
- **Synthetic Drugs:** By using Synthetic Drugs people will suffer from serious side effects
- Few examples of Synthetic Drugs: Sulfonylureas, Biguanides/Metformin, Alpha-glucosidase inhibitors, Thiazolidinediones, Meglitinides
- **Homeopathy:** Homeopathy have a long history of chronic ailments, and hence the treatment takes time. homeopathy is slow acting

- **Herbal medicines:** The natural medications with antidiabetic activity are widely formulated because they are better compatibility with human body, easily available and less side effects when compared with the synthetic antidiabetic medications. Antidiabetic herbal formulations are considered to be more effective for treatment of diabetes. More number of plant and plant products have been scientifically tested and reported to possess anti diabetic activity <sup>26-35</sup>

**Examples of herbal medicines with proven Anti diabetic activity/ plant part used:** <sup>36-60</sup>

**Roots** -Asiatic ginseng, Ashvagandha, winter cherry, Acontium carmichaelii, Oriza sativum

**Leaves,Stems** – Sapphire-berry (Asiatic sweet-leaf)

**Fruits/Flowers**- Musa paradisiaca (Banana)

**Bark** – Ficus bengalensis (Banyan tree)

**Leaves** -Barbados, Betel, Betel vine, Black tea, Common fig,Wattakaka volubilis, Abrus precatoriusL , Aloe vera and Aloe barbadensis, Mangifera indica, Gudmar , Adulsa, Piper longum

**Leaf extract** -Bilwa, bael fruit

**Fruit pulp** - Annona reticulata (Custard apple)

**Husks extract** -Desert Indian wheat, Ispghul

**Whole plant** -Prickly chaff flower, Tinospora cardifolia

**Fruit** -Anemaranas, Atractylodes japonica, Dioscorea japonica, Nagarmotha, Zi ngiber officinalis-Rhizomes

Capsicum annum, Gandoderma lucidium

**Aerial part** -Coptis chinensis, Brahmi

**Seeds** -Galega officinalis, Lathyrus japonica, Trigonella foenum graecum

**Plant extract** -Acacia Arabica, Tinospora cordifolia

**Paste** -Allium cepa, Allium sativum

**Fruit pulp,seed leaves,whole plant** -Momordica charantia

**Extracts** -Azadirachta indica

**Root extarct** -Annonasquamosa

**Extarct** -Nigella sativa

**Dried stem** -Arjunsu

**Oleo gum resin incision of stem bark** -Guggul

**Flower** -Jaswand

**Gummy exudation of stem and bark** -Babhul

**Root leaves** -Withania somnifera

**Stem roots** -*Tinospora cardifolia*

**Roots, stolen** -*Glycyrrhiza glabra*

**Mature fruit and dried seeds** -*Syzygium cumini*

**Entire herb** -*Ocimum sanctum*

**Fruits** -*Terminalia chebula*, *Terminalia bellerica*

**Dried ripe seeds** -*Areca catechu*

**Matured fruits and dried seed** -*Syzygium cumini*

### 3. CONCLUSION

From the above study it was concluded that the most common disadvantage of using synthetic drugs is their serious side effects. This led to the use of medicines which have less/no side effects i.e., herbal medicines. The herbal medicines are considered to be better compatible with human body and are made from renewable resources of raw materials, easily available as well as cost effective. In this context, plants either wholly or a part of it or combination of its parts is used either directly or as a formulation. Various plants have been cited as examples.

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