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Mini Review

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Anti-diabetic potential of some myanmar traditional medicinal plants

Abstract

Plant derived antioxidants and α-glucosidase inhibitors are widely used in dietary supplements and have been investigated for the prevention to human neurodegenerative disorders, diabetes, and inflammation. Several herbs have been known to cure and control diabetes without causing any side effects. The present review is an attempt on reveal the plants which have been experimentally studied for anti-diabetic activity in the last ten years.

Keywords: medicinal plant, sntioxidant activity, α-glucosidase inhibitors, snti-diabetic activity, Myanmar

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Introduction

The traditional medicine plays an important role in health care of the people especially in rural areas. Plants have always been exemplary sources of drug and many of the currently available drugs have been directly or indirectly obtained from plants.[1] Recently, the search for appropriate hypoglycemic agent has been focused on plants used in traditional medicine partly because of leads provided by traditional medicine to natural products that may be better treatments than currently used drugs. Throughout the world, many traditional plant treatments for diabetes exist, however, few have received scientific or medical scrutiny and the world Health Organization (WHO) has recommended that traditional plant treatments for diabetes warrant further evaluation.[2]

At present the government of Myanmar has urged to upgrade further and extensive research on traditional methods on potent traditional drugs which can be used against certain disease that cannot be cured by western medicine and to conduct biomedical research in order to make it safer and more reliable to people. In Myanmar, diabetes mellitus is one of the major priority disease such as malaria, tuberculosis (TB), hypertension, diarrhea and dysentery, and also one of the priority disease of National Health Programme (NHP).[3]

Myanmar has rich traditional medicinal plants for the treatment of diabetes mellitus. Some of the researchers reported that a large number of herbs drug which are reputed for the treatment of diabetes mellitus.[4,5] Although these were popular plants for treatment of diabetes mellitus, scientific literature of full and systematic exploration of these natural resources with regard to hypoglycemic effect was very limited. So, some researchers in Myanmar has studied the chemical constituents and pharmacological activities of Myanmar indigenous medicinal plants and Myanmar traditional medicinal formulation (TMF) since 1994. Antidiabetes and antioxidant activities have been investigated on *Tinospora cordifolia* Mers. (Sindomanwe), *Wedeli calendulaceae* Less. (Negyagalae), *Kaempferia pulchra* Ridl. (Shan-pan-oot), *Putranjiva roxburghi* Wall. (Badi-byu), *Heliotropium indicum* Linn. (Sinhna-maung-gyi), *Rauvolfia serpentina* Linn. (Bon-ma-ya-za) root, *Alstonia scholaris* (L.) R. Rr. (Taung-mayo) leaf, Terminalia *chebula* Retz. (Phan-khar) bark, *Hydrocotyl rotundifolia* Roxb (Say Myhin Khwar), *Orthosiphon aristafus* Miq (Thagya Mageik), *Eichhornia crassipes* Solms. (Bay-dar), *Mimusops elengi* Roxb. (Kha-ye) bark, *Swieteniz macrophylla* King. (Mahogany) seed, *Cataeva religiosa* Forest (Kadet) bark, *Syzygium grande* (Wi) Walp. (Thabye-gyi) bark, *Commelina communis* Linn. (Myint-Kyut), Spirulina, *Gomphrena globosa* L. (Ma-nhyo-lon) and Morus *alba* Linn. (Po-sa). Inhibitory effect on α – glucosidase activity have been studied on in the fruit of *Momordica charantia* Linn. (Kyet-Hinn-khar), *Gynura procumbers* (lour.) Merr. (Pyar-Hme, Pyar-Hme-chun), *Cataeva religiosa* Forest (Kadet) bark and *Syzygium grande* (Wi) Walp. (Thabye-gyi) bark, *Commelina communis* Linn. (Myint-Kyut), Spirulina, *Eupatorium odoratum*L. (Bizat), *A. xanthioides* Wall. (Chinbaung Hpala), and *Lagerstroemia speciosa* L. (Pyin-ma).[6-11]

Methodology

The study aimed to recollect and record, the information on anti-diabetic plants from the published literature.[6–11] All the plants recorded were used for the treatment of diabetes to reduce hyperglycemic condition, antioxidant activity and α-glucosidase inhibition effect.

Conclusion

The traditional medicinal plants, commonly used by local practitioners for various types of ailments, were found to have high potency in hypoglycemic activity as well as in free radical scavenging and α-glucosidase inhibition activity. From the review, it is concluded that, the medicinal plants, which possess anti-diabetic activity is more abundant in nature. The review will enhance the existing knowledge of medicinal plants, and also will go a long way to helping the poor folks in locality who tend to prefer herbal therapy to conventional medicine to manage diabetes mellitus at lower cost.

Conflict of Interest

The author declares that there is no conflict of interest that could be perceived as prejudicing the impartiality of this review.

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