

Chapter 14

MOMORDICA CHARANTIA (MIGHTY POMEGRANATE) AND ITS ANTIDIABETIC EFFECT

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INTRODUCTION

Diabetes is one of the most common diseases in developed and developing countries ⁽¹⁾ Increasing evidence indicates that chronic hyperglycemia in diabetes causes microvascular and macrovascular complications associated with increased risk of mortality such as atherosclerosis, hyperlipidemia, ischemic attacks, retinopathy and nephropathy. ^(1,2) It has been determined that there are more than 1200 herbal medicines that have a beneficial effect in the tender. It is estimated that one third of diabetic use complementary and alternative medicine. ⁽²⁾ It is clear from the current literature that one of the plants that draw the most attention in terms of diabetic properties is *M. charantia* and it is widely used. ⁽³⁾ In this form, it is one of the most promising herbs for diabetes today, with traditional use backed by modern scientific evidence of the beneficial function of *M. charantia*. For these reasons, this review will mainly focus on the introduction of *M. charantia* and its anti-diabetic properties.

MOMORDICA CHARANTIA AND ITS VARIETIES

This plant is also used to lower blood sugar between indigenous communities of Asia, South America, India and African Populations. ⁽¹⁾ In the world, bitter melon, bitter cucumber, balsam apple, balsam pear, karela, bitter gourd, fu kwa, nigai uri, It is also known as ampalaya, karela, papailla, pavaaki, sal-samino, peria, sorossies, chin li chih and goo-fash. ⁽⁴⁾ In our country, worm-wood, strange apple, bitter melon, miracle apple, and papara are often known as “Mighty Pomegranate.” ⁽⁵⁾ It is a tropical and subtropical fruit. It is a member of the Cucurbitaceae (Cucurbitaceae) family of the vine family. It was first grown in India and introduced to China in the 14th century. ⁽⁶⁾

The shape and bitterness of this plant variety with edible fruits are different in many countries. Although it is a tropical plant, it is possible to grow in

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damage of the heart. ^(19,20) Charantia fruit extract has been shown to have anti-hyperglycemic, antioxidant and cardioprotective properties that may be useful in the treatment of diabetic cardiac fibrosis. ^(21,22) It also maintains blood pressure because it absorbs excess sodium in the body. It is rich in iron and folic acid, which reduces the risk of stroke and protects the heart. ⁽²³⁾

Effect on diabetic nephropathy

After 28 days of treatment with *Momordica charantia* juice supplement, the effect of pioglitazone on PKC- β and PPAR- γ activity in kidneys compared to pioglitazone determined a significant decrease in PKC- β levels. ^(21,22) Administration of MC extract prevents oxidative damage in diabetic nephropathy. ⁽²⁴⁻²⁶⁾

Effect on wound healing in diabetes

It shows that the application of the MC extract improves and speeds up the wound healing process in diabetic animals. ⁽²⁷⁾ Therefore, its use should be investigated in the treatment of diabetes-related foot wounds.

CONCLUSION

M. charantia is a traditional medicinal plant that is popularly used for the management of diabetes. Many studies have been shown to have glucose-lowering activity. More research is needed to develop anti-diabetic oral medication from this natural source. However, due to the hypoglycemic effect of fruit extracts, *M. charantia* (potency pomegranate) tends to be seen among people as a diabetes treatment and alternative nutritional advice. For this reason, it is important for diabetes professionals to be informed about this medicinal plant to provide accurate information to diabetics.

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