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Study applications extract of plant various *Artemisia* in the medical field: Review

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Abstract

The *Artemisia* plant which grows in most desert areas of the world, One of the important plants at all times, as it has been scientifically and practically proven to be non-toxic, By taking it orally, whether in powder or solution form by humans, And using chemical statements and measurements of chemical devices for its alcoholic and aqueous extract, it contains A wide range of compounds, most of which are anti-oxidants. It helped to use it extensively in the industrial field in the form of pesticides, and in the medical field in the prevention and treatment of parts of the digestive system, increasing the activity of the enzymes of the heart, liver, pancreas. In addition to containing a group of chemical elements that lead to an increase in the effectiveness of these enzymes, As well as to combat cancer cells using the alcoholic extract from it, and because of the presence of phenols in its composition, it was used as anti-bacterials. The most important thing is that it is used in some countries of the African continent to treat some cases of the Corona epidemic. In European countries, it is currently being studied and developed for use in the treatment of Corona, because of its ease of access, simplicity of production, licenses when selling and the absence of side effects when using it, and this helped the world to eliminate the global pandemic.

Keywords: *Artemisia*, toxic, stomach, bacteria, corona

Introduction

The *Artemisia* plant belongs to the genus *Artemisia*, which is the most important genera of the well-known compound family (Asteraceae), which is evergreen shrubs, standing up to a height of 30 to 50 cm. Its branches are numerous and bushy, ending with pinkish-green or white-green heads, containing from 2 to 4 flowers in each roe. The inflorescences are vertical, terminal, small, seated, oval in shape, yellow in many angles, glossy, the leaves are small, alternate positioning feathery, often compound, and their color is tinted gray or greenish-gray or greenish-silver. Its roots are many in number and gray in color, small in size, elongated with a narrow slit ^[1] and the wormwood plant is classified according to ^[2] Under the class (Asteridae), the order (Asterales), and the family (Asteraceae), and under the family (Asteroideae) family (Anthemideae), under the subfamily (Artemisinin), the genus (*Artemisia* L). This plant is used a lot in traditional, natural and folk medicine because of its many medicinal properties and in many countries. It is many types and grows in desert plains areas in many countries ^[3]. The one that was used is the fruit of the wormwood plant taken from the Western desert region in Iraq, where the wormwood plant has many active compounds and other mineral elements that activate enzymes and transporter proteins in the cell membrane and this represents a good reputation in traditional and pharmaceutical medicine, perfumes and flavor ^[4]. This prompted researchers to test the various extracts obtained from this plant in the treatment of physiological disorders and to detect the active substances to which this activity was attributed. It has been used to treat many ailments since ancient years, as its fruit is used to treat fevers. And infused with relieving diabetes and expelling worms ^[5-6]. It is also burned to disinfect homes from bad odors and expel vermin ^[7-8]. and it is used as a lotion for the affected eyes with ashes and disinfectants against various germs and fungi. Its powder is also used to treat skin diseases, wounds and burns, and to improve the immunity of the human body. And treatment of respiratory diseases ^[9]. It is widely used in the treatment of drug-resistant and non-drug-resistant malaria, for the digestive system and urinary tract disorder, and as an antispasmodic ^[10].

And that wormwood has many effects such as anti-inflammatory^[11], antioxidant^[12], (antihypertensive, anti-hyperlipidemic^[13]), and finally where wormwood extract has been used to treat diabetes in Middle Eastern countries since long time ago^[14].

Results

Many studies were conducted on the fruit of the ripe Artemisia plant, which was dried and milled, and was taken from the Western desert regions in Iraq, where the studies initially included knowledge of the active chemical components in the Artemisia plant, as the first study showed that the extracted aqueous solution (cold and hot) of the Artemisia is of an acid nature Because it contains many glycosidic compounds, phenols, rats, and resins, Which was identified using GC-mass technology to clarify the nature of phytochemical compounds in terms of molecular weight and partial formula, and it was found that the extract of the wormwood fruit contains high levels of particularly active compounds represented by the group of antioxidant compounds, the bulk of the fruit and its ability to bind to groups Other active. In addition to its ability to activate the SGOT enzyme, at a rate of (15%) for the cold aqueous extract and (48%) for the hot aqueous extract. The careful analysis of the mineral elements of the powder of the Artemisia plant also proved that it contains some elements, especially (Cd, Zn, Ni, Cu, Cl, Pb) and in different concentrations, as the presence of these elements increased the enzyme activation process (SGOT), which plays an important role as it gives An indication of the functioning, effectiveness and activity of some body parts (liver, kidneys, pancreas, etc). The second study shows results showing that the hot aqueous extract contains more active compounds than the cold ones. The hot extract of the Artemisia fruit was used. In this study the extent of its effectiveness as a treatment for diabetes in mice with streptozotocin-induced diabetes was determined. Artemisia extract can be a good treatment for this condition due to the effects of its chemical components, which correct imbalances in the function of liver cells and cells, which lead to elevating insulin, reducing FBS levels, and activating GOT and GPT enzymes in the blood. And the effects of Artemisia extract differ according to its concentration. It appears that the best concentration of Artemisia extract that has been used to control diabetes is between 500 to 1000 mg of Artemisia / kg of body weight, by controlling the level of insulin. It has been well proven that Artemisia extract is very useful in diabetes due to the presence of secondary metabolites of compounds (flavonoids, alkaloids, phenols, glycosides and terpenes) in different concentrations, which gave it the anti-diabetic ability, as Artemisia can be a good treatment for this condition due to the effectiveness of its chemical components by correcting the defect in beta cells And raise levels of insulin and glucose in the blood. On the other hand, it enhances innate immunity and acts as an immune modulator of anti-fungal agents that secrete IL-6 and TNF- α , normalizing levels of IL-6 and TNF- α in the blood, central nervous system and lymphoid organs that connect together. While the kidneys were not affected by STZ or Artemisia, the results of the study of methanolic extract of the Artemisia fruit, in different concentrations, for a period of 72 hours showed the importance of iron metabolism in determining the effectiveness of Artemisia extract

derivatives in killing cancer cells. Derivatives of Artemisia extract stimulate the apoptosis of cancer cells by activating the cytochrome C-mediated intrinsic pathway for apoptosis. Which is an active physiological process that leads to cellular self-destruction that includes specific morphology and biochemical changes in the nucleus and cytoplasm, where the study discussed the apparent modification of the tumor environment that is particularly rich in iron, These indications indicate that iron is likely to be more concentrated in cancer cells compared to iron levels in healthy tissues, providing a target for Artemisia compounds to generate free radicals that inhibit those cells by 50% and prevent cell proliferation by 50%. among other results, it was found that due to the presence of medicinal, low-polar active components that contributed to the treatment of malaria, and as a result of the widespread medical and pharmaceutical uses of Artemisia, it was found that it does not contain toxic compounds and it is harmless to human health, but it is not preferable to give it to people who have infectious disorders. Finally, one of the most important results of this plant extract proved its clinical efficacy through trials conducted in low-income countries. According to the claims for its efficiency and as a result of its containing anti-inflammatory compounds, antioxidants and antimicrobial substances, and for its display of the antiviral activity of malaria, waterworm extracts were used as an anti-epidemic treatment of the age of COVID_19 by giving it in the form of a hot water drink for a period of one week twice a day in Africa and proved its success. However, this idea and project were rejected by the World Health Organization.

Conclusion

Recently, it appeared that modern medicine has returned to traditional medicine by using medicinal plants to treat various diseases including diabetes common in the Middle East, where many other researchers have studied the effect of a large portion of Artemisia on diabetes. The fruits were used in one of the studies where they were dried and milled, and then some chemical analyzes were made to determine the active compounds of the fruits in the hot and cold extract. And by using all kinds of water extracts of Artemisia, hot, cold and alcoholic^[15-16]. The genus of Artemisia can be considered one of the important species used as a medicinal plant, and for the treatment of many traditional diseases and the control of chronic diseases^[17] In many studies it was concluded that it is possible to use the fruit of the Artemisia plant with all kinds of its aqueous and alcoholic extracts, In the treatment of intestinal infections and diarrhea^[18] and hypoglycemia^[19-20]. As it was reported that the secondary metabolites present in the compounds of Artemisia have different potentials for antidiabetics, which work to repair damage to some pancreatic cells and thus increase insulin secretion in the blood and lower the level of sugar in the body^[21]. Regulating heartbeats^[22-23] as well as treating damage or damage to the stomach wall^[24-25]. Whereas, the synergistic effects of Artemisia from its antioxidant compounds and its biological interaction between malaria and cancer can be a rich source of this plant's antioxidant properties. For malaria, immunity, anti-inflammatory and anti-cancer, Where flavonoids and their derivatives were found within the extract of Artemisia, which work to capture free radicals to be compounds with potency and strong immune activity that work on treating

parasitic diseases such as malaria [26] in addition to the presence of an endoperoxide group that interacts with iron compounds in the blood that It leads to the generation of free radicals as one of the main mechanisms of its anti-cancer activity and thus prevents, delays or helps treat cancer [27]. Where natural phytochemicals have been accepted as the type of medicine, epidemiological and experimental, as studies have shown that traditional herbs can reduce the incidence of certain types of cancer based on a study that showed that wormwood has beneficial biological activities, including cancer, anti-obesity, anti-inflammatory activities, and no The toxicity of the plant extract of the wormwood fruit and its use in many medicinal fields, It has become medicinal and can be used against the pandemic of the era, the korna virus, as it was used in Africa temporarily and now there are studies in Britain and Germany with coffee being mixed with it to increase the effect against the virus, so the wormwood fruit has become one of the medicinal plants that form a large part of natural plants [28]. That is why we recommend using natural plants as foodstuffs in the treatment of some pathological conditions instead of chemical drugs compounds that lead to harmful and harmful side effects.

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