

## *Polygonum bistorta*: From traditional Iranian medicine to modern pharmacology

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The earth planet is endowed with a rich heritage of medicinal plants which are extremely wonderful in their properties and effects. *Polygonum bistorta* is one of these mysterious herbs. Its appearance with red or pale flowers which is very eye-catching, but the main part is hidden in the earth in the rhizome which has the effects that are unknown. In the modern world, *Bistorta* has a therapeutic power that can be put to medical application. In traditional medicine it has been used for stop bleeding of any site of the body specially chest and lung. According to the idea of traditional healers, *Bistorta* is cold and dry in temper, so it is astringent. The main component of the plant's active ingredient which is responsible for the astringency is tannin at about 20 percent. The anti hemorrhagic effects are probably due to the tannin ingredient but further studies are recommended to confirm this relationship. Other main components are the oils, accounted for 0.004 to 0.010% of the fresh plant. Several studies have revealed several classes of other compounds with a predominance of alcohols in the vegetative phase, terpenes and linear-chained saturated hydrocarbons in the flowering phase, and saturated aliphatic acids and their methyl esters in the fruiting phase. Despite the important role of the plant in the Iranian Traditional Medicine prescriptions and even other herbal medicines, only few studies have evaluated the basic mechanisms of *Bistorta* therapeutic effects. An animal study to investigate the effect of *Bistorta* n-butyl alcohol (PBNA) extract on the NO content and NOS activity in ischemia/reperfusion (I/R) injury in the rat retina suggested that PBNA have a therapeutic effect on retinal ischemia/reperfusion injury by increasing the activities of T-NOS and eNOS, decreasing the activity of iNOS, elevating the content of NO, enhancing the anti-oxidation and expanding the blood vessel. This effect of increasing blood flow can be beneficial for limb fracture to treat fast or for scars to disappear very soon. The other main effect of *Bistorta*, the anti inflammatory effect, seems to be due to the active compounds such as 5-glutinen-3-one and friedelanol. It has been shown that the plant has also a good protective effect against hepatic toxicity of acetaminophen overdose. The latter two features are proven by studies; these few studies could not show all the miraculous healing Power of this herb though. *Bistorta* is still an open gate for researchers to discover its mysteries. This article can be the start point to suggest a wider exploration of the healing power of *Polygonum bistorta* according to Iranian traditional medicine literatures.

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## Participatory headache in the Avicenna traditional medicine

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Headache is a prevalent and disabling condition affecting people in all age groups worldwide that degrade quality of life and job performance. The etiology of a large group of headaches is still unclear in the conventional medicine though. Our literature review shows that there are several reports of headache cases that suffer from other medical problems as well. This was the key that directed us to investigate an important headache group that is not classified by the International Headache Society (IHS): The participatory headache. In the Traditional medicine, the participatory headache (Sodae mosharekati) is defined as the headache not originated from the head and neck; rather the headache is caused by another organ dysfunction/disease. Treatment of this type of headache completely depends on treatment of the original affected organ. Our study showed that there are significant evidences in the conventional medicine literature for different types of the participating headache as is classified into the following categories in traditional medicine: 1- Headache caused by the stomach that may cause pain in the frontal lobe. Conventional medicine scientists also believe that headache is a frequent feature of functional gastrointestinal disorders. 2- Headache with kidney origin that causes occipital pain; There are several reports of cases with kidney disease suffer from headache that can be explained with the category of the participatory headache. 3- Headache with liver origin which can cause pain in the right parietal lobe. Our literature review shows relationship among migraine and liver disease. 4- Bowel, bladder and uterus origin of the headache is also well documented in the patients with IBS, bladder and uterus disease. In conclusion, it is suggested that recognizing the participatory headache as described in traditional medicine, can help medical researchers to improve headache diagnosis and treatment protocols.

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