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Research Article

Advances in modern research and clinical application of “an arrow” of folk herbs

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ARTICLE INFO

Article history:
Received Date: 30 September, 2018
Accepted Date: 10 October, 2018
Published Date: 5 November, 2018

Keywords:
an arrow
chemical composition
medicinal value
progress

ABSTRACT

“An arrow” has the functions of activating blood circulation to remove blood stasis, clearing away heat and detoxifying, and is commonly used in the treatment of diseases such as snake bites and bruises. This paper reviews the current situation of “an arrow” research, explores its chemical composition and medicinal value, and provides scientific information for the use of an arrow in Chinese medicine research.

The arrow described in this article is a plant belonging to the Pteridophyta, Filicophytina, Eusporangiopsida, Ophiglossales, Ophioglossaceae, Ophioglossum. It is also called lvy, small lvy, snake bites, whispering grass, spear and shield, contradictory grass, a gun. It has the effects of clearing away heat and detoxifying, promoting blood circulation, removing fever and reducing fever. It is commonly used in the treatment of bruises, sore throat, stomach pain, stomach ulcers, night blindness, pediatric hoarding, mastitis, snake bites, etc. In recent years, it has been widely used in the treatment of pneumonia, hepatitis and some cancers.

Overview

Form and distribution

An arrow is a perennial herb with a height of 10 to 30 cm. The root is fleshy, cylindrical, and fibrous. The leaves are solitary, narrow or wide, oval, and the veins on both sides are parallel to the midrib. Spore leaves are produced from the apex of the stalk. The spore leaves have long stems and the spores are white. Born in rivers, ditch, mountain forests, grasslands and other wet places, and adaptable, can grow in the low temperature environment and rock cracks in Northeast China, widely distributed in Northeast China, the middle and lower reaches of the Yangtze River, Guangxi, Taiwan, Southwest China and other places, it is also widely distributed in the Americas, Australia, and Europe.

Classification

There are three types of common herbs called an arrow, which have different shapes and functions. The first type, described in this paper, is loaded in the Chinese herbal medicine literature such as "Chinese Flora", "Common Chinese Medicine Handbook", "Grass and Bamboo", etc [1-3]. The second type is a plant of the Compositae,Huan Yangshen Genus. It is contained in the catalogue of "Big Arrow" in "Southern Materia Medica" [4]. The third type is the plant of Pulsatilla Genus of the Compositae, and the "small arrow" is contained in the catalogue in "Southern Materia Medica" [4]. In addition, there are many documents that record the alias "An Arrow", such as the Shiwei,which of the Water Keel Branch, Shiwei Genus, the Tie Bangchui of Ranunculaceae,Aconitum Gneus, the Cichi Nihua Grass of Scrophulariaceae,Mother Grass Gneus and so on [1, 5, 6]. In the literature and database, there are as many as 46 “arrows” in the form of catalogues and aliases, which are from 21 families [7].

Chemical composition

Flavonoids

Yunlian Lin studied the chemical constituents of the blunt-headed

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http://dx.doi.org/10.31487/j.EJGM.2018.01.005

Ophioglossum [8]. The chemical constituents of flavonoids isolated from the blunt-headed Ophioglossum were kaempferol, 8-isopentenyl quercetin, luteolin, quercetin, 3-O-methyl quercetin, 3-O-methyl-quercetin-7-O-diglucose-4'′-O-glucoside. Wenchao Hu also identified the bottle of chlorin, 3-O-methyl quercetin-7-O-β-D-glucoside, 3-O-methyl guanidine in the sylvestris Peel 7-O-β-D-glucosyl-4-O-β-D-glucoside, kaempferol 3-O-(6-O-caffeoyl)-β-D-glucosyl-(1→2)-α-L-rhamnose-7-O-α-L-rhamnoside, 3-O-methylquercetin 4'-O-β-D-glucoside, and the like [5].

High flavonoids

These flavonoids are separated from the dihydrogen brass, flavonol, chalcone and isoflavones by a carbon bond on the alanine C ring or the B ring skeleton, except for the Caesalpinia minax. In addition to a high flavonoid isolated from the plant, the remaining high flavonoids were found in the genus of the genus [9].

Sesquiterpene lactone

Shaohua Wu studied the chemical constituents of an ethanol extract from an arrowhead and isolated two sesquiterpene lactones, taraxinic acid-1'-O-β-D-glucopyranoside (1) and 11, 13-dihydro-taraxinic acid-1'-O-β-D-glucopyranoside (2) [10].

Oil component

Mainly oleic acid, linoleic acid, methyl oleate, methyl linoleate, methyl palmitate, methyl linolenate, 4,7-nonadecadienic acid, methyl stearate, chlorophyllin Wait.

Protein component

Bitao Zeng used the Kjeldahl method to determine the total protein content of an arrow produced by Yibin [11]. The total protein content of an arrowhead rhizome was 7.38%, and the total protein content in the petiole and leaves was 19.69%.

Medicinal value

An arrow is a traditional Chinese medicine commonly used in China. It has the functions of clearing away heat and detoxifying, promoting blood circulation and removing blood stasis. It is commonly used in the treatment of snake bites, bruises, colds, fever, swollen sores, stasis and abdominal pain, hemorrhoids itching, and hematoma. Pain, burns, hepatitis, pneumonia, respiratory infections and acute conjunctivitis, eyelid blepharitis, etc [12-15].

Treating snake bites

Peng Zhao clinical application of an arrow to treat snake bites in 76 cases showed that the use of conventional Chinese medicine treatment of snake bites was effective for an average of 4 days, healing average of 9 days; the longest taking Chinese medicine for 13 days, the shortest serving of Chinese medicine for 5 days Among them, 5 cases of critically ill cases were transferred to an arrow treatment group for treatment safety [16]. One arrow treatment group was effective for an average of 2 days, and the average recovery time was 5 days; the longest medication was 7 days, and the shortest medication was 3 days. The results showed that the effect of an arrow on the treatment of snake bites was peculiar and the advantages were obvious.

Protect gastric mucosa and resist gastric ulcer

Lingfei Mao in the study of the effect of an arrow's ethanol extract (EEO) on the expression of EGF in acetic acid-induced gastric ulcer rats, EEO can significantly promote the healing of ulcers, EEO can enhance the expression of EGF in rats [17]. Because EGF is located in the patina, it mainly concentrates on the wall and neck cells of the stomach gland and the basal part of the ulcer edge tissue. Therefore, the promotion of EEO may promote the repair and healing of the ulcer by promoting the differentiation and proliferation of the mucosal tissue cells at the edge of the ulcer. Wu Shaohua isolated and extracted sesquiterpene lactone from an arrow to obtain two sesquiterpene lactone compounds. The chemical composition of this article has been described. The experiment shows that compound 1 has protective gastric mucosa and anti-gastric ulcer activity.

Coagulation

An arrow lectin (OPA) has different coagulation activities when treated at different temperatures and pH. Studies have shown that coagulation activity is relatively stable below 40℃, the blood coagulation activity begins to lose when higher than 50℃, most of the activity is lost when the temperature is higher than 90℃, but about 20% activity at 100℃, The coagulation activity is relatively stable from 4 to 9 ph. The experiment shows that an arrow lectin exhibits strong tolerance to high temperature and acidic environment, and can agglutinate natural rabbit blood cells and agglutination human O blood cells,and it has a strong inhibitory activity to mannan and thyroid globules protein [18].

Anti-oxidize effect

Xu Haitang applied the response surface methodology to extract the total flavonoids from the geranium grass and determined its antioxidant activity [19]. The experiment showed that the total flavonoids of the geranium had strong scavenging effect on DPPH free radicals, and superoxide anion radicals. The scavenging effect is also good, and also has a strong reducing ability. When the concentration of total flavonoid extract of Herba sinensis is 1.0mg/ml, the clearance rate of gerbera is 90%; the IC50 of superoxide anion radical is 0.156mg/ml; when the concentration is 0.2mg/ml, the absorbance was 0.379, and when the concentration was 1.0 mg/ml, the absorbance increased to 1.804.

Other

Lin Biao and other observations of endophytic fungi have certain anti-neuroinflammatory activity and found that endophytic fungi have certain anti-neuroinflammatory activity and are potential resources for screening natural bioactive components or lead compounds. Liu Su reported that long-term use of an arrow can cause gastrointestinal bleeding, but it is impossible to determine which arrow the patient took

[20, 21].

Outlook

Modern scholars have made in-depth research on Chinese herbal medicine and made great contributions to human life and health. It is expected that more scholars will use advanced technology to continually explore folk herbal medicines, expand the application value of these folk medicines, and give greater protection to human health.

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