A Review On Arisaema jacquemontii

Hemlata Verma*, Dr. V.K Lal *, Dr. K. K Pant *, Nidhi Soni **

1 Azad Institute of Pharmacy & Research, Azadpuram (Near CRPF Camp), Post-Chandrawal, Lucknow-226002, Uttar Pradesh, India
2 Sagar Institute of Technology & Management, Deprt. Of Pharmacy, Barabanki, Lucknow, (U.P) India
3 Dept. of Pharmacology, Chhatrapati Shahaji Maharaj Medical University, Lucknow, (U.P) India
4 School of Pharmacy, Suresh Gyan Vihar University, Jaipur, Rajasthan, India

Received on: 10-12-2011; Revised on: 15-01-2012; Accepted on: 12-02-2012

ABSTRACT

Plants are a great source of medicines, especially in traditional medicine, which are useful in the treatment of various diseases. Medicinal herbs are moving from fringe to mainstream use with a great number of people seeking remedies and health approaches free from side effects caused by synthetic chemicals. Arisaema jacquemontii is an ancient plant and had been used by the various tribes for various purposes in their daily life like food article and for treating diseases. The review summarizes ethno medicinal uses and other available data on this medicinal plant to explore its utility.

Key Words: Arisaema jacquemontii, ethnomedicinal uses, pharmacology, chemistry, toxicity

INTRODUCTION

Plants have been used as medicines since beginning of human civilization. India has had a history of ancient traditional medicinal practice based mostly on Ayurveda, Siddha and Unani systems of medicine. Medicinal plants have always been the main constituents of the traditional medicine. Indian Materia Medica includes about 2000 drugs of natural origin almost all of which are derived from traditional system. Approximately 25 percent of all prescription drugs are derived from trees, shrubs or herbs. Nature has bestowed our country with an enormous wealth of medicinal plants therefore India has often been referred to as the medicinal garden of the world. Arisaema jacquemontii is a cobra lily belonging to genus arisaema. One unusual trait shared by all Arisaema species, and not those of other genera within the Araceae is the ability of plants to change sex during their lifetime. Arisaema plants are typically male when small, and female or hermaphroditic when large, with a single plant capable of changing sex depending on its nutrition and genetics and perhaps changing sex several times during its long life (20 years or more). It has five to seven narrow, palmate leaves and taller flowering stalk with green, white striped, spathe with long upturned white or purple tail-like tip. Variable height from 4 -28”.

Classification: [3]

Arisaema jacquemontii

Kingdom: Plantae
Phylum: Magnoliophyta
Class: Angiospermae
Order: Alismatales
Family: Araceae
Genus: Arisaema
Species: Arisaema jacquemontii

Natural habitat

It is probably the most common species of Arisaema from our part of the world. In its natural habitat it is found growing in the Shrubberies and rocky slopes in upper forest and lower alpine zones in the drier areas of the Himalayas, 2400 - 4000 metres [4]. It is native to Afghanistan, China, India, Nepal and Pakistan. Arisaema jacquemontii is fairly common in Himalayan forests at 2,300–4,300 m above sea level. It also occurs in the Nilgiri Hills in southern India, and the Khasi Hills region of north-east India. [5]

Cultivation

It prefers a cool peaty soil in the bog garden, woodland garden or a sheltered border in semi-shade [6, 7]. Prefers a loamy or peaty soil and will tolerate a sunny position if the soil is moist but not water-logged and the position is not too hot or exposed. This is probably the hardest of the Himalayan species and should succeed outdoors in many parts of the country. Only plant out full sized tubers and mulch them with organic matter in the winter. Plants need protection from slugs. Closely related to A. wardii. Most species in this genus are dioecious, but they are sometimes monoecious and can also change sex from year to year. [8, 7]

Propagation Methods

By dividing rhizomes, tubers, corms or bulbs (including offsets) From seed; sow indoors before last frost

Seed- best sown as soon as it is ripe in a shady position in a cold frame. Stored seed remains viable for at least a year and can be sown in spring in the greenhouse but it will probably require a period of cold stratification. Germination usually takes place in 1 - 6 months at 15°C. When large enough to handle, prick the seedlings out into individual pots and grow them on in light shade in the greenhouse for at least a couple of years until the corms are more

* Corresponding author.
Hemlata Verma
Azad Institute of Pharmacy & Research,
Azadpuram (Near CRPF Camp),
Post-Chandrawal, Lucknow-226002,
Uttar Pradesh, India
Ethanomedico practice in traditional Tibetan therapy system by Cough and respiratory tract infection in cows and buffaloes (Plant part-tuber) Pakistan

Ethanoveterinary practice by peoples of Shawar valley district, Swat, get rid of skin eruptions. At present it is recommended for the treatment of is used on chronic boils as a remedy. The water extract of the bulbs is used to local tribals use it. The tubers are collect and chopped; the pout ice formed (Plant part-Rhizome) India.

Ethanomedico practice by the peoples of Kashmir Himalaya region India. [10] (Plant part-Rhizome) Local tribals use it. The tubers are collect and chopped; the pout ice formed to get rid of skin eruptions. At present it is recommended for the treatment of skin infections caused due to cold temperatures

Ethanoveterinary practice by peoples of Shawar valley district, Swat, Cough and respiratory tract infection in cows and buffaloes Pakistan [11] (Plant part-tuber)

Ethanomedico practice in traditional Tibetan therapy system by amchis (medical practitioners) in Upper Mustang, Nepal [12] (Plant part-root, rhizome and flower)

Ethanomedico practice by peoples of Kashmir Himalaya region India, [13] (Plant part-root) Used to treat boils. The root is dried then crushed to make powder. The powder is mixed with ghee or oil to make paste

Ethanomedico practice by peoples from Kaghun Valley, Mansehra District, Pakistan [14] (Plant part- Whole plant) Camouflage for snakes in coniferous temperate zone

Ethanomedico practice by peoples from Uri Kashmir Himalaya, India [15] (Plant part-Rhizome) Rhizome ground with edible oil forms a paste, which is used for massage purposes in order to regain the muscular strength and in skin problems such as blisters, pimples etc.

Ethanomedico practice by peoples of Kedarnath Wildlife Sanctuary in Western Himalaya, India [16] [17] (Plant part-Tuber) Tuber is used in Cough, kidney, Skin diseases as ringworm-killer and in snakebite

Ethanomedico practice Jaunsari tribe of garhwal Himalaya, Uttranchal India [18] (Plant part-Fruit) Fruit decoction is used as snakebite antidote

Ethanomedico practice among the tribal of Chitrul Valley Pakistan [19] (Plant part- Fruits and rhizome) Fruits and rhizomes are poisonous and cause sedation. Very small quantity is used during meal for relieving body pain. Also used in small quantities in various preparations by “Hakims” for psychic and nervous disorders

Ethanomedico practice among the Kot Manzaray Baba Valley Malakand Agency, Pakistan [20] (Plant part-Tuber) Used for snake bites

Ethanomedico practice by Manali Wild life Sanctuary, North western Himalaya, India. [21] (Plant part-Bulb) Bulb is used for the treatment of ringworm and skin diease

Chemistry

Roots of Arisaema jacquemontii led to the isolation of two new triterpenoids, which were characterized by NMR, IR, and MS spectra as 30-nor-lanost-5-ene-3beta-ol (1) and 30-norlanost-5-ene-3-one (2) [22] An anti-cancer compound – arisemone – has been isolated from the plant [23]

Known Pharmacology

Anti-insect and Anti-proliferative activity

Larvae fed on artificial diet containing sublethal dose of AIL showed a significant decrease in acid phosphatase and alkaline phosphatase activity while esterase activity markedly increased as compared to larvae fed on diet without lectin. Out of various human cancer cell lines employed in sulphorhodamine B (SRB) assay, this lectin was found to have appreciable inhibitory effect on the in vitro proliferation of HCT-15, HOP-62, SW-620, HT-29, IMR-32, SKOV-3, Colo-205, PC-3, HEP-2 and A-549 cancer cell lines by 82, 77, 73, 70, 41, 41, 37, 29, 21 and 21% respectively. [24]

Toxicity

The plant contains calcium oxylate crystals. These cause an extremely unpleasant sensation similar to needles being stuck into the mouth and tongue if they are eaten but they are easily neutralized by thoroughly drying or cooking the plant or by steeping it in water. [25]

CONCLUSION

This plant grow as a weed in rainy season and people cut it down but by the help of its worldwide ethanomedicinal information this plant have good future prospective for exploration of its pharmacological activity for treating various diseases. As the global scenario is now changing towards the use of plant product having traditional medicine use, development of modern drug from Arisaema jacquemontii should be emphasized for the control of various diseases.

REFERENCES

8. F. Chittendon, RHS Dictionary of Plants plus Supplement. 1956
9. DP Agrawal, Himalayan Medicine System and its Materia Medica
11. S.M. Khan et al., Pakistan Journal of Biological Sciences, 2007, 10(10), 1743-1746
15. Z.A Khan; A.A Khuroo and GH Dar, Indian journal of traditional knowledge, 2004, 3(4), 351-357,

Source of support: Nil, Conflict of interest: None Declared