Herbal remedies used against arthritis in Kishtwar High Altitude National Park

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Arthritis literally meaning inflammation of joints is a common ailment of cold regions caused by wear and tear on the articular cartilage (Osteoarthritis) through the natural ageing process, constant use, trauma or one of number of inflammatory processes. Regardless of the cause, the joints become inflamed, causing swelling, pain and stiffness. Although there is no cure for most forms of the arthritis, various phyto-therapies can help patients manage symptoms and improve their over all quality of life. The present communication deals with traditional remedies used against arthritis by indigenous populace in Kishtwar High Altitude National Park. During the course of study it was observed that the local populace in the Kishtwar High Altitude National Park use 13 different herbal treatments involving 14 plants/plant parts for arthritis but the choice and frequency of use for herbs is influenced by many factors such as season of the year, accessibility and knowledge of other species.

Keywords: Herbal remedies, Arthritis, Kishtwar high altitude national park

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Plants assume greater significance in view of the fact that they are primary producers besides providing habitat to variety of animals and innumerable services to the human beings. Many plants growing in wild are panacea to different kinds of ailments and diseases and more than 80% of world population depend on them for primary health care needs1. In India, the use of medicinal plants is a centuries old tradition. Written accounts testify the usefulness of plants for medicinal purposes, perhaps the earliest use was documented in Vedas in about 4500 to 600 B.C. which represents the oldest repository of human knowledge, comprises 67 plant species2. More than 2800 km long and 220 to 300 km wide3, Indian Himalayan region (IHR) is a mega hot spot of biological diversity4. The flora includes 8000 species of angiosperms, 44 species of gymnosperms and 600 species of pteridophytes with 40, 16 and 25 endemic species respectively 5,6 which include some 1748 species of medicinal plants with various therapeutic uses6. From Vedic to scientific records of traditional knowledge, there are enough evidences that plants serve as main medicinal source for rural populace. The medicinal knowledge and practice are passed down entirely through the oral tradition and personal experience7, however with rapid growth and spread of allopathy, the traditional methods of treatment are becoming obsolete8, but still large number of people especially inhabitant of remote areas are using plants for treatment of ailments by traditionally inherited means because of insufficient medical facilities9.

Arthritis literally meaning “inflammation of joints” is a common ailment of cold regions10 caused by wear and tear on the articular cartilage (Osteoarthritis) through the natural aging process, through constant use, through trauma (post traumatic arthritis) or one of number of inflammatory process. Regardless of whether the cause is from injury, normal wear and tear, or disease, the joints become inflamed, causing swelling, pain and stiffness. Osteoarthritis is the most common type of arthritis, often more painful in joints that bear weight, such as knee, hip and spine, rather than in wrist, elbow and shoulder joints. Rheumatoid arthritis is a long lasting disease. Although there is no cure for most forms of the arthritis, various phyto-therapies can help patients manage symptoms and improve their over all quality of life. During the present study we tried to find out the traditional remedies used against arthritis in Kishtwar high altitude national park (Trans Himalayas).

Spread over an area of 425 sq Km Kishtwar High altitude national park lies between 33° 20′ to 34° 40′

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North latitude and 75° 40’ to 76° 10’ East longitudes. The altitude of national park varies between 1400 m at Karood to 6500 m at Bramah peak. Climate is temperate with severe winters and moderate summers. The area displays steep slopes and high ridges broken by rocky cliffs and in between narrow valleys. A sizable area of the national park is inhabited by the indigenous population as well as nomadic Gujjar and Bakarwals, who bring their cattle for grazing during summer. The economically weak population of the area is mostly dependent on the agriculture and the wild resources for their healthcare needs. One of the main reasons for their continued dependence on natural resources is lack of the motorable roads, electricity, and tough terrain.

Methodology
To assess the traditional knowledge about herbal remedies used against arthritis, frequent interactions and discussions were made with the local villagers, which include hakims, Voids (local medicine men) and housewives. The indigenous knowledge was gathered through questionnaire approach. Live specimens and available photographs were shown to them for local identification. In the case of herbal medicine practitioners, the information received was given consideration only after confirmation from 2-3 other local practitioners apart from primary source. The plant specimens were identified using available floristic literature, Flora of British India\textsuperscript{11}, Flora of India\textsuperscript{12}, Flora of Jammu\textsuperscript{13}, Flora of Udhampur\textsuperscript{14}, Flora of Pirpanjal\textsuperscript{15} and a large number of other floras and publications dealing with flora of the temperate regions. Some of the specimens were identified by matching them with the labeled herbarium specimen lying in departmental herbarium of the University of Jammu.

Enumerations
*Atropa acuminata* Royle ex Lindl., Family: Solanaceae; English name: Indian belladonna; Local name: *Brand, Nachan Ariel*

Traditional use: The fresh roots of the plant are crushed and made into paste, which is applied on the joints for relief.

*Colchicum luteum* Baker, Family: Liliaceae; Local name: *Yarkum posh*

Traditional use: Fresh corms are collected, crushed and applied externally for relief. Juice of the corm is taken orally for the same purpose.

*Cedrus deodara* (Roxb. ex D. Don) G. Don, Family: Pinaceae; English name: Himalayan Cedar; Local name: *Diddar, Diyar*

Traditional use: The wood of this conifer is cut into small pieces of 8-10 cm length. These pieces of wood are then heated and the oil which comes out of the wood is collected. The oil thus obtained is massaged over the affected areas for relief.

*Datura stramonium* L., Family: Solanaceae; English name: Thorn-Apple; Local name: *Datur*

Traditional use: Seeds of this plant are collected at maturity. The dried seeds are crushed and mixed with mustered oil. The preparation thus obtained, is stored. When need arises the preparation is applied externally on the ailing joints.

*Delphinium roylei* Munz. , Family: Ranunculaceae; Local name: *Mameri*

Traditional use: Roots of this plant are collected by local medicine-men at flowering stage and stored after properly drying in open sun. The powdered roots are given to the patients with persistent pain in lower back. The herb is considered poisonous if taken in large quantity. Patients are advised to take healthy food and adequate milk while undergoing this treatment.

*Geranium wallichianum* D. Don ex Sweet, Family: Geraniaceae; Local name: *Ashud, Sonobar*

Traditional use: In Kishtwar High Altitude National Park the roots of the herb are given orally in severe backache.

*Iris kemaonensis* Wall. ex Royle, Family: Iridaceae; Local name: *Sosan*

Traditional use: The nomads visiting the highlands of the National Park as well as the local shepherds who go to higher altitude with their cattle herd during summer use rhizome of this alpine. Fresh rhizomes are applied for relief from the joint pain.

*Meconopsis aculeata* Royle, Family: Papaveraceae; Local name: *Gul-e-neelam*

Traditional use: In Kishtwar High Altitude National Park both nomads (Gujjar and Bakarwals) as well as local herds’ men (Chowpan) take the leaves of the herb orally as a remedy for backache and stiffness.

*Phytolacca acinosa* Roxb., Family: Liliaceae; English name: sweet belladonna; Local name: *Ariel*

Traditional use: The roots of the herb are collected from the forest areas at mature stage and dried. The powdered dried roots mixed with warm mustard oil are applied on ailing joints.

*Aconogonum alpinum* (All.) Schur., Family: Polygonaceae; Local name: *Palkach*
Traditional use: In Kishtwar High Altitude National Park the dried roots of the plant are considered as potent home remedy against the arthritis. Fresh roots of this alpine perennial are collected and are crushed after washing thoroughly. The poultice is applied on the paining, stiff and swollen joints.

*Rheum australe* D. Don, Family: Polygonaceae; Local name: *Pambush*

Traditional use: In Kishtwar High Altitude National Park the dried root of this alpine herb are made into powder and mixed with the oil obtained from the kernels of *Prunus armeniaca*. The mixture is later used for the treatment of swollen joints. However if the oil of the plant is not available only root paste is applied on the affected areas.

*Saussurea costus* (Falc.) Lipsch., Family: Liliaceae; English name: Costus; Local name: *Kuth*

Traditional use: In Kishtwar High Altitude National Park the roots of the plant are collected at maturity. After washing roots are dried in open sun for several days. The roots are then powdered and mixed in mustard oil. When needed the preparation is warmed and applied on swollen and aching joints.

*Hypericum perforatum* L., Family: Hypericaceae; English name: Goat weed, St. John’s wort; Local name: *Basant*

Traditional use: The roots of the plant are crushed mixed with oil (olive, mustard) preferably olive and applied on the swellings.

Discussion and conclusion

Although Local populace in the national park use 13 different treatments involving 14 plants/plant parts for arthritis but the choice and frequency of use for herbs is influenced by many factors such as season of the year, accessibility and knowledge of other species (as for as identification is concerned). The people who are settled at lower altitude of national park do not have easy assess to alpine herbs like *Rheum australe*, *Saussurea costus*, *Meconopsis aculeata*, *Geranium wallichianum*, *Aconogonum alpinum* and *Iris kemaonensis*, hence their first choice remains the species available in and around their homes. Of these 13 plant species, seven species grow at lower altitudes and are easily available to most of the inhabitants living in the National Park. Roots of *Phytolacca acinosa*, resin from the wood of the *Cedrus deodara* and seeds of *Datura stramonium* remains their first choice. Species like *Colchicum luteum*, *Delphinium roylei* and *Atropa acuminata* are other potent herbs but they have their own limitations, because *Colchicum luteum* grows in early spring and remains available for very short period, *Delphinium roylei* is considered poisonous even if taken in slightly larger quantity hence people avoid this herb when others are available, similarly, *Atropa acuminata* is a narcotic herb with limited distribution in the National Park. Roots of *Hypericum perforatum* with olive oil is considered as an efficient remedy for swelling but while using with mustard oil it is considered as less potent, hence olive oil becomes a limiting factor for using this therapy.

Among the alpine herbs *Aconogonum alpinum* and *Meconopsis aculeata* are used fresh and it is believed that their effectiveness decreases considerably after drying therefore they are used only by nomads and local herds men who go to higher altitude with their livestock during summer season. *Saussurea costus* and *Rheum australe* are the most potent herbs among all of these plants for arthritis but they are confined to only few areas in National Park hence denying assess to common man. Local medicine men and few other villagers who have knowledge of these two species collect their roots and make available to others also. *Saussurea costus* although considered most potent species for arthritis but it is least used for the same purpose. The reason behind this is a local myth that if it fails to work against the ailments no other therapy will work thereafter. So this species is used for arthritis when all other herbal therapies fail to work against arthritis.

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