

ETHNOMEDICINAL PLANTS USED FOR THE TREATMENT OF SPRAIN AND FRACTURES BY THE NEPALESE COMMUNITY OF EAST SIKKIM

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Abstract

The paper deals with the ethnomedicinal practices used for the treatment of sprain and bone fracture. The study was conducted in the east district of Sikkim. Even though modern medicinal facilities are available, people here use plant therapy to a considerable extent. This may be contributed to the rich floral wealth of the state. The information about folk medicinal use, vernacular names of the plants, method of administration and parts used are documented.

Key words

Sprain, Bone fractures, Ethnomedicine, Folk practices, East Sikkim.

INTRODUCTION

Knowledge of Traditional medicine from natural resources has nurtured the human race and holds the secret of healing by indigenous and local communities [1]. The conservation and sustainable utilization of medicinal plants resources is essential to sustain our traditional culture of medicine and fast growing herbal industries [2]. Traditional knowledge has been used for centuries by indigenous and local communities and plays a vital role in the area of medicinal treatment. Traditional ethnomedicinal studies have in recent years received much attention due to their wide local acceptability and clues for newer or lesser known medicinal plants. The traditional knowledge on medicinal plants is the main basis for biocultural and ecosystem conservation as well as selection of various plant species for further pharmacological, phytochemical, toxicological and ecological studies[3]. Sikkim a small Northeastern state with an area of 7,096

sq. km. It lies between 27 04' 46" and 28 07' 48" North latitude and 8800' 58" and 8855' 25" East longitude on the southern slope of the Eastern Himalayas. It is bounded by Singhalila range in the West and Chole range in the East. The Northern boundary by Tibetan plateau and to the South is Darjeeling Gorkha Hill Council of West Bengal. Sikkim constitutes 0.22% of the total geographical area and 0.05% of the total population with 5,40,851 persons (2001) census of India. The population of Sikkim today comprises of 14 hill tribes and many plains men communities. The main hill tribes comprises of Lepchas, Bhutias and Nepalais [4,5]. A sprain (from Middle French *espraindre* - to wring) is an injury to ligaments that is caused by being stretched beyond their normal capacity and possibly torn. A muscular tear caused in the same manner is referred to as

a strain. In cases where either ligament or muscle tissue is torn, immobilization and surgical repair may be necessary. Ligaments are tough, fibrous tissues that connect bone to bone across the joints. Sprains can occur in any joint but are most common in the ankle. A fracture is any loss in the continuity of bone and is most frequently the result of trauma. The term fracture encompasses all bone injuries from simple undisplaced cracks in bone, to major complex long-bone fractures with extensive soft tissue injuries [6]. The report is based on the study that was conducted in East district of Sikkim. This district has a good literacy rate and modern medicinal facilities are available even to the poor. In spite of this, a good percentage of population still prefer to use traditional medicine which is like a family heirloom and is transferred by means of inheritance and also due to the availability of a rich floral diversity of the state [7].

MATERIAL AND METHODS

For collection of the data semi-structured interviews, questionnaire and direct observation were used. The information was gathered and confirmed by repeated queries raised time to time among the local herbal practitioners and the users as well. Healers have been registered under State Medicinal Plant Board as Traditional Herbal Practitioners of Sikkim. The data was cross-checked with variables informants of Sikkim.

Identification of plants was done using relevant flora and herbaria of BSI Gangtok.

RESULT AND DISCUSSION

The plant studied are enumerated with their botanical names, family, local name (in *Nepali*), part used, mode and duration of treatment. The data collected indicate the use of 6 plants for the treatment of sprains and 18 plants for bone fractures (Table 1). Some plants were used individually while some were used in formulation. Apart from plants, milk, oil, spider web, red mud was used in some formulation. In most of the formulation the method of administration is the same. A total of 09 herbal practitioners and 50 patients of sprain and bone fracture were consulted. The record for successful treatment was found to be 99%. Documentation of the medicinal plants used by the Nepalese tribe of East Sikkim is the first hand report which shows that despite having modern medical facilities, people of this state use plant therapy to a considerable extent. Since, most of the villages in this district are inhabited in remote areas, their ethnobotany remain confined within local areas. Documentation of these plants will not only provide new medicines but will also help in conservation of medicinal plants. There is an urgent need to conserve them before they are extinct due to over exploitation [8]. Also the claimed therapeutic values of the reported species are to be critically examined to establish safety and effectiveness

Table 1: Plants used in the treatment of Sprain, bone fracture and ethnic practice

Scientific name & Family	Local name (Nepali)	Parts used	Mode of use	Duration of treatment
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bhui champa	Rhizome	The rhizome of Bhui champa, entire plant of Harchur and Pakhenbed is ground into paste and bandage the affected area with it.	7-8 days
<i>Viscum articulatum</i> Burm./Viscaceae	Harchur	Whole plant		
<i>Bergenia ciliata</i> (Haw.)Sternb/ Saxifragaceae	Pakhenbed	Whole plant		
<i>Trigonella foenum graecum</i> Linn. /Fabaceae	Methi	seed	Seed of Methi is grounded into powder; mixed with mustard oil and applied to the affected area. Leave till it loosens by itself	Maximum 1 week
<i>Calotropis gigantea</i> Linn./ Apocynaceae	Aank	Gum	An extracted fresh gum of Aank is applied to the affected area thrice a week	1 week
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bui champai	Rhizome	The root of Lekh sisnu and Bhui champa are grounded into paste and the affected area is bandaged with it.	10-15 days
<i>Urtica dioica</i> Linn./ Urticaceae	Lekh sisnu	Root		
<i>Kaempferia rotunda</i> Linn./	Bhui champa	Rhizome	The juice of the rhizome of Bhui champa and	1 week

Zingiberaceae			the shoot tip of Titepati are applied externally in the affected area and bandaged over it	
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bhui champa	Rhizome	The rhizome of Bhui champa, the entire plant of Harchur and Pakhenbed are ground into paste. Bandage the affected area with it. Leave it for 20-25 days	Maximum 1 month.
<i>Viscum articulatum</i> Burm./Viscaceae	Harchur	Whole plant		
<i>Bergenia ciliata</i> (Haw.)Sternb/ Saxifragaceae	Pakhenbed	Whole plant		
<i>Abroma augusta</i> Linn./ Malvaceae	Kapasey	Root	The root of Kapasey, rhizome of Bhui champa and root of Bhui chipalay are ground into paste. Mixed with red mu... and bandage the affected area with it, till it loosens	20-30 days.
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bhui champa	Rhizome		
<i>Euphorbia hirta</i> Linn./ Euphorbiaceae	Bhui Chipalay	Root		
<i>Bergenia ciliata</i> (Haw.)Sternb/ Saxifragaceae	Pakhenbed	Whole plant	All the species are harvested on Tuesday, Thursday or Saturday; ground individually and juice extracted. A type of stone known as "Dalsay dhunga" is put into the mixture which is boiled for 10 mins. Cooled and bandage on the fractured area A powder of Pakhenbed, Harchur, Bhui Chipalay and Buro Okhati is boiled with water and one glass is taken once a day	2 months
<i>Viscum articulatum</i> Burm./Viscaceae	Harchur	Whole plant		
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bhui champa	Fruit		
<i>Euphorbia hirta</i> Linn./ Euphorbiaceae	Bhui chipalay	Whole plant		
<i>Astilbe rivularis</i> Buch- Ham ex D.Don/ Saxifragaceae	Buro okhati	Root		
<i>Terminalia chebula</i> Retz./ Combretaceae	Harra	Bark		
<i>Terminalia balerica</i> Linn./Combretaceae	Barra	Bark		
<i>Euphorbia hirta</i> Linn./ Euphorbiaceae	Bhui chipalay	Bark	Bark of Bhui chipalay and spider is ground properly and made into paste. Bandage with it on the affected area. Covered with bamboo stick (kamro) and wrapped properly and leave for 15-20 days or till it loosens	15-20 days
<i>Terminalia chebula</i> Retz./ Combretaceae	Harra	Bark	Bark of Harra, Amla and Barra are ground into powder and mixed with one glass of milk and taken twice a day The barks of Mauwa, and Payun and roots of Sanu kapasay are ground into powder and boiled with water till a paste is formed. The affected area is bandaged with it	About 15 days
<i>Phyllanthus emblica</i> Linn./ Phyllanthaceae	Amla	Bark		
<i>Terminalia belerica</i> Linn./Combretaceae	Barra	Bark		
<i>Rubia cordifolia</i> Linn./ Rubiaceae	Majito	Roots		
<i>Engelhardtia spicatas</i> Blume/ Juglandaceae	Mauwa	Bark		
<i>Abroma augusta</i> Linn./ Malvaceae	Sanu kapasay	Root		
<i>Prunus cerasoides</i> D.Don./ Rosaceae	Payun	Bark		
<i>Anthogonium gracile</i> Wall ex.Lindl./ Orchidaceae	Bhui sunakhari	Rhizome	The paste is prepared from the rhizome and pseudobulb which is applied externally for curing bone fracture and dislocation. Bandage is applied on the affected part and is retained for 3-5 weeks but dressing has to be changed in between, at regular intervals at 5-7 days	About 15- 20 days
<i>Asparagus racemosus</i>	Satamuli	Root	Crushed root paste prepared from roots is	7 days

Willd./Asparagaceae			applied externally in case of bone fracture and joint dislocation	
<i>Curcuma longa</i> Linn./Zingiberaceae	Hardi	Rhizome	Paste is prepared from rhizome powder along with lime in 1:1 ratio and is applied on fractured bones. Bandage is applied for 4-5 weeks but older paste is removed and new paste is applied at regular intervals of 4-5 days	1 Month
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bhui Champa	Rhizome	A paste of rhizome is prepared along with the roots of <i>Laportea terminalis</i> and aerial portion of <i>Viscum album</i> is applied externally and bandaged on bone fracture and joints dislocation for 3-5 weeks, depending upon the seriousness of the damage on bone. Bandage is changed regularly at the interval of 5 days	1 Month
<i>Garuga pinnata</i> Roxb./ Bursereaceae	Dubdabey	Bark	The bark juice is applied to treat dislocated bones	1 Month
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bhui champa	Root	Bhui champa, Bhui chiplay and Lekh sisnu are ground into paste and bandaged	1 Month
<i>Euphoria hirta</i> Linn./ Euphorbiaceae	Bhui chiplay	Root		
<i>Urtica dioca</i> Linn./ Urticaceae	Lekh sisnu	Root		
<i>Euphoria hirta</i> Linn./ Euphorbiaceae	Bhui chiplay	Whole plant	Whole plant of Bhui chiplay, rhizome of Bhui champa and bark of Mauwa is ground properly and juice extracted. Mix and boil the mixture with water and make paste. Bandage with this paste in the fractured portion	22-25 days
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bhui champa	Rhizome		
<i>Engelhardtia spicata</i> Blume/ Juglandaceae	Mauwa	Bark		
<i>Bergenia cilata</i> (Haw.)Sternb/ Saxifragaceae	Pakhenbed	Whole plant	Pakhenbed, Harchur, Bhui champa, Bhui chiplay, Buro Okhati are harvested on Tuesday, Thursday and Saturday, ground individually and juice extracted. A type of stone known as "Dalsay dhunga" is put into the mixture which is boiled for 10 mins. Cooled and bandaged on the fractured area A powder of Pakhenbed, Harchur, Bhui Chiplay and Buro Okhate is made and boiled with water and one glass is taken once a day	2 Months
<i>Viscum articulatum</i> Burm./Viscaceae	Harchur	Whole plant		
<i>Kaempferia rotunda</i> Linn./ Zingiberaceae	Bhui champa	fruit		
<i>Euphoria hirta</i> Linn./ Euphorbiaceae	Bhui chiplay	Whole plant		
<i>Astilbe rivularis</i> Buch- Ham ex D.Don/ Saxifragaceae	Buro Okhati	Root		

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