

Herbal therapy for herpes in the ethno-medicine of Coastal Karnataka

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Traditional herbalists of Coastal Karnataka were found to be practicing 34 different methods of treatment for herpes infection in which 57 species of local plants are used. A herbal paste prepared by grinding one or more herbal ingredients for repeated application on the lesions of the skin is the common formulation involved in all the recorded methods. A scrutiny of literature revealed that 25 of plant species used have antiviral and other antimicrobial properties. In addition, some plants are described as antiinflammatory, wound healing and coolants in the ethnomedicinal literature of India, a few of which have been scientifically ascertained. These facts provide an indirect scientific basis to the efficacy of the recorded treatment methods.

Keywords: Herbal therapy, Ethno-medicine, Herpes, Coastal Karnataka.

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Coastal Karnataka, comprising of 3 revenue districts, namely Dakshina Kannada, Udupi and Uttara Kannada, is a diversified region lying to the western edge of the state of Karnataka (Fig. 1). It is situated between latitudes 12°28' – 15°31' N and longitudes 74°32' – 75° 4' E, is a narrow belt of land that lies between the Western Ghats and the Arabian Sea, having an average width of 50 - 80 km and a length of about 267 km. The total geographical area is 19,753 sq km. This region receives heavy rainfall, in the range of 2,500 - 3,000 mm and it harbors different types of vegetation such as littoral, scrub, moist deciduous and typical evergreen.

Total population of this area is 43,63,617 with an average population density of 253 persons per sq km. According to the Census 2001, Dakshina Kannada has the highest density at 337 persons. Udupi district's density is 290 persons and Uttara Kannada has 132 persons per sq km. The people of the region represent a mixture of rich ethnic and cultural diversity. *Besta*, *Brahmin*, *Bunt*, *Devadiga*, *Gudikar*, *Idiga* and *Kumbara* are the predominant non-tribal indigenous communities while *Koraga*, *Kunbi*, *Malekudiya*, *Gowli*, *Halakki Vokkaliga* and *Siddi* are the important tribal groups inhabiting this region.

The area is still predominantly agrarian with about 80 % of the work force employed in agriculture and allied activities including growing cash crops of coconut, areca nut and other horticultural products. More than 70 % of cropland is under cereals with rice as the principal crop. Fishing is the other major source of livelihood with about 1,00,000 people directly engaged in fishing. *Kannada* and *Tulu* are the major languages while others like *Marati* and *Konkani* are also spoken.

The rich ethnobotanical practices of this area have already received considerable scientific attention and the ethnomedicinal practices specific to some tribal groups and disease categories have been documented¹⁻⁷. In this paper, the results of a study aimed at documentation and analysis of the various traditional herbal methods of treatment for herpes practiced in the coastal districts of Karnataka are summarized.

Herpes is an acute and recurring skin inflammation caused by infection by a group of viruses in developing countries. Appearance of spreading clusters of tiny red blisters or vesicles on the skin, associated with severe burning sensation are the diagnostic symptoms⁸ (Fig. 2). In the folk medicinal tradition of Coastal Karnataka, this skin infection is known variously as *sarpa suthu*, *agnisarpa*, *visarpa*,

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etc. for the treatments of which the local populace rely mostly on traditional herbal methods. Their witnessed confidence upon these time tested treatment practices renders them worthy of a scientific enquiry as such traditional data may provide valuable clues to the development of novel plant based drugs to treat herpes.

Methodology

Information regarding the methods of treatment and plants used in them was gathered from the traditional herbal healers belonging to the non-tribal communities (Fig. 3) and three of the tribes, namely the *Koraga*, the *Malekudiya* and the *Halakki vokkaliga*. The study period extended from March 1995 to June 2000 during which a total of 128 such informative herbalists were contacted and repeatedly interviewed in their own localities. Simultaneous to the recording of methods of treatment and common names of plants used, herbarium materials of the plants were also gathered with the help of the local guides. They were identified with the help of local floras⁹⁻¹¹ and deposited in the Herbarium of Department of Applied Botany, Mangalore University. In certain cases, the healers practically rendering the treatment to the patients was also observed contextually to ascertain the validity of recorded information and its healing efficacy.

Results

A total of 34 different methods of treatment for herpes commonly practiced by the indigenous herbalists of Coastal Karnataka were recorded during the present study. All of them together included 57 species of local plants. A list of these plant species

with pertinent information about their botanical names, family, part(s) used and common name(s) is provided (Table 1). Total number of methods in which a particular species is used also indicated in the table. Among the 34 recorded methods, 11 are single herbal, 7 are bi-herbal and 16 of them involve ingredients derived from three or more plants. One of the methods included combination of various parts of as many as 15 different species of plants.

A herbal paste prepared by grinding the specified herbal part(s) for repeated application on the lesions of the skin is the common formulation involved in all the recorded methods. Juice obtained by crushing the tender pericarp of a local variety of coconut (*Cocos nucifera* L.) called *Gendali* or the fruit of lime [*Citrus limon* (L.) Burm. f.] is commonly employed as the liquid medium to grind the herbal part(s) into paste. Some of the methods also included other herbal formulations like a decoction to clean the lesions periodically and, a juice or paste for internal administration.

Discussion

Areca catechu, *Aristolochia indica*, *Coscinium fenestratum*, *Croton roxburghii*, *Curcuma longa*, *Cyclea peltata*, *Indigofera tinctoria*, *Ixora coccinea*, *Memecylon malabaricum*, *Rauwolfia serpentina* and *Zanthoxylum rhetsa* are widely used, both as single herb cures and in combination with other plants, in the traditional methods of treating herpes in coastal Karnataka. Of them, a special mention must be made of *Memecylon malabaricum* which emerges as a plant of repute from the districts of Udupi and Dakshina Kannada because it is hitherto not reported



Fig.1—Map of Coastal Karnataka



Fig.2—Appearance of Herpes lesions

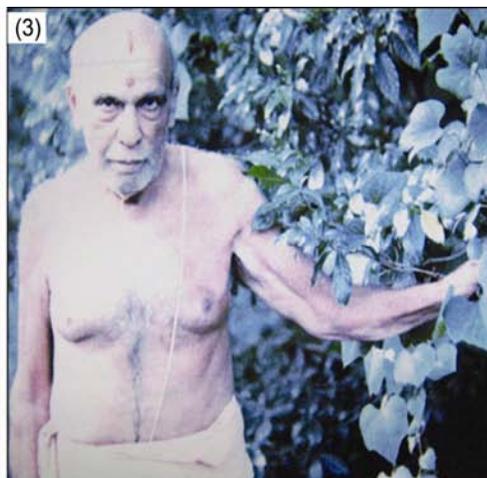


Fig.3—A traditional herbal healer

Table 1—Plants used in the treatments of herpes in the ethno-medicine of Coastal Karnataka

Plant name / family	Common name(s)	Part(s) used	methods of use
<i>Abrus precatorius</i> L. Papilionaceae	<i>Gulugunji</i>	Root/leaf	+
<i>Acacia pinnata</i> (L.) Willd. Mimosaceae	<i>Chende</i>	Root	+
<i>Acorus calamus</i> L. Araceae	<i>Baje</i>	Root	+
<i>Aglaia elaeagnoidea</i> (Juss.) Benth. Meliaceae	<i>Unvala kayi</i>	Leaf	+
<i>Ampelocissus indica</i> (L.) Planch. Vitaceae	<i>Chemballi</i>	Root	+
<i>Areca catechu</i> L. Areaceae	<i>Adike/Bajjeyi</i>	Pericarp	(+)+
<i>Argyreia nervosa</i> (Burm.f.) Boj. Convolvulaceae	<i>Ammemole balli</i>	Leaf	(+)
<i>Aristolochia indica</i> L. Aristolochiaceae	<i>Ishwara beru</i>	Root	++++
<i>Asparagus racemosus</i> Willd. Liliaceae	<i>Udri kande</i>	Root	+
<i>Azadirachta indica</i> A. Juss. Meliaceae	<i>Bevu</i>	Leaf	++
<i>Boerhaavia diffusa</i> L. Nyctaginaceae	<i>Komme</i>	Root	+
<i>Bombax ceiba</i> L. Bombacaceae	<i>Buruga/Mullala</i>	Stem bark	+
<i>Breynia vitis-idaea</i> (Burm. f.) Fisch. Euphorbiaceae	<i>Palli soppu</i>	Leaf	++
<i>Bridelia scandens</i> (Roxb.) Willd. Euphorbiaceae	<i>Bandanar</i>	Root	++
<i>Bridelia retusa</i> (L.) Spreng. Euphorbiaceae	<i>Balagane</i>	Stem bark	+
<i>Caesalpinia bonduc</i> (L.) Roxb. Caesalpinaceae	<i>Gajjuga/</i>	Seed	+
<i>Calycopteris floribunda</i> Lam. Combretaceae,	<i>Anjiru</i>	Stem bark	++
<i>Careya arborea</i> Roxb. Lecythydaceae	<i>Daddala</i>	Stem bark	++
<i>Catunaregam spinosa</i> (Thunb.) Tirv. Rubiaceae	<i>Kare</i>	Root/fruit	++
<i>Celastrus paniculatus</i> Willd. Celastraceae	<i>Gangamma balli</i>	Root	+
<i>Centella asiatica</i> (L.) Urban Apiaceae	<i>Ondelaga/Thimare</i>	Whole plant	+
<i>Cinnamomum verum</i> J.S.Presl. Lauraceae	<i>Ijin</i>	Stem bark	+
<i>Clerodendrum serratum</i> (L.), Moon Verbenaceae	<i>Baarengi</i>	Leaf	+
<i>Coscinium fenestratum</i> (Gaertner) Colebr. Menispermaceae	<i>Mara manjal</i>	Stem	(+)+
<i>Crinum viviparum</i> (Lam.) Hemadri Amaryllidaceae	<i>Visa munguli</i>	Root	+
<i>Croton roxburghii</i> Balak. Euphorbiaceae,	<i>Somar</i>	Root	(+)+
<i>Cuminum cyminum</i> L. Apiaceae	<i>Jeerige</i>	Fruit	+
<i>Curcuma longa</i> L. Zingiberaceae	<i>Arasina/Manjal</i>	Rhizome	++++
<i>Cyclea peltata</i> (Lam.) H.K.F.& Thoms. Menispermaceae	<i>Hadeballi/Padala</i>	Leaf	++++
<i>Cynodon dactylon</i> (L.) Pers. Poaceae	<i>Garike</i>	Whole plant	+
<i>Eclipta prostrata</i> (L.) L. Asteraceae	<i>Garga</i>	Whole plant	+
<i>Embelia ribes</i> Burm.f. Myrsinaceae	<i>Vidanga</i>	Fruit	+
<i>Ficus benghalensis</i> L. Moraceae	<i>Aala/Goli</i>	Stem bark	+
<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Schult. Asclepiadaceae	<i>Sappe soppu</i>	Leaf	(+)
<i>Hemidesmus indicus</i> (L.) Schult. Asclepiadaceae	<i>Sukurma/ Nannari</i>	Root	+
<i>Holarrhena pubescens</i> (Roxb.) A.DC. Apocynaceae	<i>Kodasa</i>	Stem bark	+
<i>Hugonia mystax</i> L. Linaceae	<i>Mullankole</i>	Root	+
<i>Hybanthus enneaspermus</i> (L.) F.V.Muel. Violaceae	<i>Purusha rathna</i>	Whole plant	+
<i>Indigofera tinctoria</i> L. Papilionaceae	<i>Neeli gida</i>	Leaf/root	(+)+
<i>Ixora coccinea</i> L. Rubiaceae	<i>Kiskara,</i>	Leaf/root	(+)+
<i>Jasminum malabaricum</i> Wight Oleaceae	<i>Adroli</i>	Leaf	++
<i>Jasminum officinale</i> L. Oleaceae	<i>Jaaji mallige</i>	Leaf	+
<i>Jatropha curcas</i> L. Euphorbiaceae	<i>Beli audala</i>	Stem	(+)
<i>Memecylon malabaricum</i> (L.) Cogn. Melastomataceae	<i>Olle kodi</i>	Leaf	(+)+
<i>Merremia tridentata</i> (L.) Hall. f. Convolvulaceae	<i>Neyi kulovu</i>	Leaf	+
<i>Oroxylum indicum</i> (L.) Vent. Bignoniaceae	<i>Ane mooku</i>	Stem bark	+
<i>Polycarpaea corymbosa</i> (L.) Lam. Caryophyllaceae	<i>Paade mullu</i>	Whole plant	+
<i>Pterocarpus santalinus</i> L.f. Papilionaceae	<i>Rakta chandana</i>	Stem bark	+
<i>Rauvolfia serpentina</i> (L.) Benth. Apocynaceae	<i>Garudapatata</i>	Root	+++++
<i>Salacia reticulata</i> Wight Hippocrateaceae	<i>Ekanyaka</i>	Stem/root	+
<i>Santalum album</i> L. Santalaceae	<i>Gandha</i>	Stem bark	+
<i>Sida rhombifolia</i> L. Malvaceae	<i>Kallangadale</i>	Whole plant	+
<i>Sphaeranthus indicus</i> L. Asteraceae	<i>Karande</i>	Root	+
<i>Strychnos nux-vomica</i> L. Loganiaceae	<i>Kasaraka/Kayer</i>	Stem bark	+
<i>Strychnos wallichiana</i> Steud.ex DC. Loganiaceae	<i>Ballu Kayer</i>	Stem bark	+
<i>Tabernaemontana divaricata</i> (L.) R.Br. Apocynaceae	<i>Nandi battalu</i>	Root	(+)
<i>Zanthoxylum rhetsa</i> DC. Rutaceae	<i>Kaavate/ Gamate</i>	Stem bark	(+)+

(+) Used as single herb-cure, + Used in combination with other plants

Table 2—Supportive dermatological claims/biological activities reported for the ethnomedicinal plants used in herpes treatment in Coastal Karnataka

Biological Activity	Plants	References
Antimicrobial (Antiviral, Antifungal, antibacterial)	<i>Abrus precatorius</i> , <i>Acorus calamus</i> , <i>Asparagus racemosus</i> , <i>Areca catechu</i> , <i>Azadirachta indica</i> , <i>Bridelia retusa</i> , <i>Caesalpinia bonduc</i> , <i>Celastrus paniculatus</i> , <i>Centella asiatica</i> , <i>Cinnamomum verum</i> , <i>Clerodendrum serratum</i> , <i>Coscinium fenestratum</i> , <i>Cyclea peltata</i> , <i>Cynodon dactylon</i> , <i>Eclipta prostrata</i> , <i>Embelia ribes</i> , <i>Gymnema sylvestri</i> , <i>Hemidesmus indicus</i> , <i>Holarrhena pubescens</i> , <i>Ixora coccinea</i> , <i>Oroxylum indicum</i> , <i>Santalum album</i> , <i>Sida rhombifolia</i> , <i>Sphaeranthus indicus</i> , <i>Tabernaemontana divaricata</i>	22, 23, 24, 25
Antiinflammatory	<i>Azadirachta indica</i> , <i>Boerhaavia diffusa</i> , <i>Celastrus paniculatus</i> , <i>Cuminum cyminum</i> , <i>Eclipta prostrata</i> , <i>Embelia ribes</i> , <i>Ficus benghalensis</i> , <i>Gymnema sylvestri</i> , <i>Hugonia mystax</i> , <i>Ixora coccinea</i> , <i>Merremia tridentata</i> , <i>Pterocarpus santalinus</i> , <i>Oroxylum indicum</i> , <i>Salacia reticulata</i> , <i>Santalum album</i> , <i>Tabernaemontana divaricata</i>	16, 22, 25, 26, 27
Cooling effect	<i>Boerhaavia diffusa</i> , <i>Centella asiatica</i> , <i>Cyclea peltata</i> , <i>Hemidesmus indicus</i> , <i>Pterocarpus santalinus</i> , <i>Santalum album</i>	16, 26.
Ulcer/wound healing	<i>Acorus calamus</i> , <i>Azadirachta indica</i> , <i>Calycopteris floribunda</i> , <i>Celastrus paniculatus</i> , <i>Centella asiatica</i> , <i>Curcuma longa</i> , <i>Indigofera tinctoria</i> , <i>Ixora coccinea</i> , <i>Strychnos spp.</i>	22, 28.

as medicinal. Moreover, it is endemic to the Western Ghats of India¹². In preliminary studies conducted as a part of random mass screening of Indian plants for biological activities, leaves of *M. malabaricum* did not show any effect against the growth of Ranikhet disease virus and vaccinia virus¹³ whereas one of its allied species, *M. umbellatum* showed activity against Ranikhet virus¹⁴. However, in view of the strong reputation of *M. malabaricum* as cure against herpes infection and also jaundice or infective hepatitis¹⁵ in Coastal Karnataka, a detailed investigation of this plant for antiviral property is essential.

A scrutiny of relevant literature revealed that 25 of 57 plant species have been found to be possessing antiviral and other antimicrobial activity, 16 species have antiinflammatory activity, 10 species are attributed with wound/ulcer healing properties and 6 species are known for their cooling property (Table 2). The juice of the fruit of lime (*Citrus limon*) which is used as a liquid medium to grind the herbal mixture into a paste in most of the observed methods is also mentioned as antiseptic¹⁶. Reports are also available on the successful use of plants like *Coscinium fenestratum*, *Croton roxburghii*, *Eclipta prostrata*, *Hemidesmus indicus*, *Indigofera tinctoria* and *Sphaeranthus indicus* in the treatment of infective hepatitis¹⁷⁻¹⁹. These reports are interesting, considering the relationship between herpes and infective hepatitis both of which are viral infections.

The above data indicate that most of the multi-herbal formulations used in the treatment appear to be comprising of combinations of plants, each possessing

one or more activities needed to counter the causative virus and the different symptoms such as inflammation, wound formation and the severe burning sensation associated with herpes. Thus, the final healing may be resulting by the synergistic actions of all of them. Moreover, a few methods also involve two or more plants reported to be antiviral. In such cases, there is a possibility that each of these plants may be acting against a particular pathogenic strain of herpes virus and this may be a strategy adopted by the traditional methods to target the different strains with a single formulation. Such traditional approaches of combination therapy deserves appreciation also because studies have shown that the modern approach of continued treatment with single anti-herpes compound like acyclovir may result in the development of mutants resistant to the drug^{20,21}. Though, all these can be taken as the indirect indication of the scientific basis of the traditional methods of treatment, its confirmation needs detailed pharmaco-chemical investigations.

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