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Ethnobotanical Formulations for Chronic Disorders by Yerukala Tribe of Warangal District, Telangana

KEYWORDS: Yerukala tribe, herbal formulations, chronic disorders.

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ABSTRACT *Ethnomedicinal practices of the tribe Yerukala, a semi nomadic community from warangal district of Telangana state was studied for chronic disorders during 2013 and 2014. Thirty one different formulations were recorded for fourteen types of chronic ailments, where thirty two plant species belonging to twenty two families were involved. The data was recorded based on expertise and the successful cases. Chronic disorders like Convulsions, Jaundice, Infertility, Migraine, Paralysis, Diabetes, Arthritis etc. were considered, for which solo as well as composite herbal preparations are available.*

INTRODUCTION

Ethnic groups of various regions of the world are the real custodians of nature's wealth and experts in herbal medicine (Burmol and Naidu, 2007) and their practices are an important part of the primary health care system in the developing World (Sheldon, Balick and Laird 1997). Such indigenous, traditional knowledge, transferred orally for centuries is fast disappearing because of the technological developments and its interference with ethnic culture (Ganesan, Suresh and Kesavan, 2004).

Because of the various side effects of the synthetic drugs, the value of medicinal plants is being rediscovered as some of them have been proved to be effective as synthetic medicines with fewer or no side effects and contraindications. It is also proved that the effects of natural remedies seem to be slower, but the results are sometimes better on the long run especially in chronic diseases (Akunyili, 2003). Hence, the studies on ethnobotany and establishment of complete identity is gearing up in the Indian sub-continent to avoid any confusion all through future application.

Researchers identified 122 compounds used in mainstream medicine which were derived from "ethnomedicinal" plant sources; 80% of these compounds were used in the same or related manner as the traditional ethnomedical use (Fabricant and Farnsworth, 2001). It is estimated that over 6000 plants in India are in use in traditional, folk and herbal medicine, representing about 75% of the medicinal needs of the Third World countries (Rajshekharan, P. E. 2002). Over 3000 plants are officially recognized in the country for their medicinal value. The Sushruta Samhita attributed to Sushruta in the 6th century BC describes 700 medicinal plants, 64 preparations from mineral sources, and 57 preparations based on animal sources (Agarwal, Sundaram, Malani and Ichikawa, 2007). Atleast 7000 medicinal compounds in the modern pharmacopoeia are derived from plants (Interactive European Network for Industrial Crops and their Applications, 2000-2005)

Fig. 1. Elderly men and woman involved in traditional work and collection of herbs.

Incredible magnitude of information about the traditional uses of plants is still intact with the tribal people as part of their culture, which has potential future medicine. One such tribe is Yerukala among the 33 scheduled tribes of Andhra Pradesh and Telangana (India census 2001). According to Gopinath, Anil Kumar, Trinadha and Oliver (2010) there are 35 scheduled tribes in these states, of which 27 inhabit the Eastern Ghats tracts and rest of the tribes are distributed sparsely in other districts.

Yerukala, a semi-nomadic plains tribe, is found throughout the state of Telangana . The people of this community are traditionally basket makers and swine herders. Though live mostly in multi caste villages, maintaining symbiotic rela-

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tions with non-tribals, they cultivate their unique beliefs and practices. As per the records of the anthropologists, Yerukala tribe is considered to be the native of the southern region of India. The knowledge of the tribe was found to be un-explored from the district of warangal in particular and the ethnobotanical studies need to be extended to this tribe to document with regard to the identification of medicinal plants and drug formulation.

Study area

Warangal District of Telangana, the ancient capital of Kakatiyas, owns a distinct cultural heritage. It lies between 17°19` and 18°13` north latitudes and 78°49` and 80°43` east longitudes, under Deccan Plateau physiographic zone. It has an average elevation of 302 meters (990 feet) above the sea level. The total geographical area of the district is 12, 847 km^2 and the population is 3, 246,004 according to census of India (2001). From vegetation and land use map, agriculture fields approximately (incl. fallow lands) constitute 62.22% of total area, while the forest, scrub, water bodies and barren lands covers 24.38, 5.65, 3.47 and 3.28% area respectively. Of the total forest cover of 3,132 km^2, dry deciduous forest type is composed of 82.01% of area. The second most abundant forest type (10.03% of area) is moist deciduous forest (Reddy, Babar, Sudha and Raju, 2008).

METHODOLOGY

According to Dubey, Rajesh and Pramila (2004), every plant-based product must be documented properly with regard to the identification of species and utilization of specific parts of the plant. During our study, several field trips were undertaken for collection of plants in different seasons in 2012 and 2013. Information on the plants was gathered through oral interviews of the tribal people, especially old men and herbalists. Throughout the interviews, local plant names, used plant part, preparation method, application mode and dosage of drug were recorded. Different villages around the district headquarters, namely Karimabad, Orus, Dharmaram, Mogilicherla, Fort-warangal and Ghanpur were visited during the years 2012 and 2013. Services of the local people were utilized in identifying the plants in their habitats, followed by exhaustive discussions with traditional healers. The data was recorded based on their expertise and successful cases. It was recorded in the format designed by Kapoor and Mitra (1987) and has been modified for

Table 1. Enumeration of the chronic ailments and formulations used by the tribe.

Therapeutic indication	Plant name (Local name) Family	Part used	Preparation	Administration and Dose
Tinea versicolor	Ocimum sanctum L. (Tulasi) Lamiaceae	Leaves	Fresh leaves of O. sanctum and rhizome of A. calamus are ground separately to make fine paste.	Leaf paste and rhizome paste of both the plants are mixed in equal quantities and applied on the body externally.
	Acorus calamus L. (Vasakommu) Araceae	Rhizome		
Convulsions (Fits)	Ocimum sanctum L. (Tulasi) Lamiaceae	Leaves	fresh leaf extract of O. sanctum and V. negundo or O. sanctum and M. olifera is obtained by grinding the leaves together	2 drops administered orally for 3days, twice daily, before meals. (at sunshine and at sunset)
	Vitex negundo L. (Vavili) Verbenaceae	Leaves		
	Moringa olifera LAM. (Munaga) Moringaceae	Leaves		
	Acalipha indica L. (Muripinda) Euphorbiaceae	Leaves	Fresh Leaves are ground to get extract.	One drop of leaf extract in each nostril.
	Moringa concanensis NIMMO EX DALZ. & GIBSON (Karumunaga) Moringaceae	Bark	The bark, is ground to collect the filtrate and equal quantity of cow/ goat milk is added.	About one tea cup orally, empty stomach, once daily for 3 days. Diet: plain rice with Garlic pickle for 9 days. No brinjal, potato, fishes, sweets and tea in diet for at least 3 months.
	Acalipha indica L. (Pippy/Muripinda) Euphorbiaceae	Leaves	Both the leaves are ground in equal quantities and filtered.	One drop of the extract in each nostril.
	Vitex negundo L. (Vavili) Verbenaceae	Leaves		
	Zizyphus xylopyrus Willd (Enugapariki/Gotti) Rhamnaceae	Bark	Bark extract is obtained by grinding with cow or goat milk.	One teacup on empty smooch, once daily for three days. No spicy food, potato, fish, sweets and brinjal during medication.

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Male Infertility	Glycyrrhiza glabra L. (Athimathuram) Fabaceae	Leaves	Fresh leaf extracts of both the plants is mixed with rock sugar.	One tea cup of the preparation once times a day.
	Hybanthus enneaspermus (l.f.) muell. (Rathnapurusha) Violaceae	Leaves		
	Mucuna puriens (L.) DC. (Dhool dumma/Dhurada gondi) Fabaceae	Roots and leaves	Heap full of roots or leaves are taken and ground with cow or goat's milk.	One tea cup of extract, three times a day. Roots are effective than leaves*.
	Hibiscus rosa sinensis L.(Mandaara) Malvaceae	Flowers	Flower buds to be chewed orally.	3 flower buds chewed and taken orally, once daily, for 5 days.
	capparis zeylanica L. (Aadonda) Capparaceae	Root	Roots are ground with water.	One tea cup of root extract, once daily for a week.
Jaundice	Phyllanthus niruri L. (Nela usiri) Euphorbiaceae	Entire shoot	Entire shoot, heap-full (2-3 plants), ground, the juice is extracted and mixed with small glass of milk or curd.	One tea cup once daily for 5days.
	Clerodendrum phlomides L.f. (Thakkali) Verbanaceae	Leaves	Heap full of leaves of C. phlomides and C. grandis are ground in equal quantities and filtered.	Administer the extract orally 2 times a day for 3 days. Apply the paste on the entire body and take bath after 2-3 hours. Diet: No spicy food for 5 days. Fruits and plain rice can be taken.
	Coccinia grandis (L.) Voigt (Donda) Cucurbitaceae	Leaves		
	Clerodendrum phlomidis L.f. (Takkali) Verbanaceae	Leaves	Fresh leaves of all the four species in equal quantities, are heated on water vapor for 10-15 minutes, ground and the extract is collected.	One tea cup of the extract, once daily for one week. Diet: Plain rice; no oil and spicy food.
	Solena amplexicaulis (lam.) Gandhi (Adavi donda) Cucurbitaceae	Leaves		
	Ricinus communis L. (Aamudamu) Euphorbiaceae	Leaves of old plant		
	Momordica charantia L. (Kakara) Cucurbitaceae	Leaves		
	Ficus hispida L.F. (Bommidi) Moraceae	Leaves	Fresh leaves are ground and the extract is collected.	One tea cup of fresh leaf extract, once daily for three days.
	Balanites aegyptiaca (L.) DELILE (Gaara chettu) Balanitaceae	Leaves	Fresh leaves are ground to collect the extract.	One tea cup of fresh leaf extract, once daily for seven days.
Paralysis	Capparis zeylanica L. (Aadonda) Capparaceae	Leaf	The leaf extract of C. zeylanica is mixed with equal quantity of cow or goat milk.	Once daily for 3 days
	Moringa oleifera (Munaga) Moringaceae	Bark	About 10 cm^2 bark is ground, and the extract is mixed with one cup of cow milk.	Once daily for 3 days
Migraine	Acalipha indica Mull.Arg. (Muripinda) Euphorbiaceae	Leaf	Leaves are crushed and pure extract is administered.	One drop administered in to the nostril on the same side where migraine is experienced.
Male impotency and Menstrual disorders	Ficus benghalensis L. (Marri chettu) Moraceae	Shoot	10gms each of Young tender leaves, Fruit, Growing shoot tips, bark, and aerial root tips are dried in shade, powdered and filtered through cotton cloth. Powder mixture can be preserved for a longer time.	50gms of above powder mixture is mixed with 100gms of powdered rock sugar. One teaspoon of the preparation is added to one glass of water and taken orally. The dose is given once daily for five days, before meals.
Joint pains/Arthritis	Sarcostemma acidum Voigt (Pulla jemudu) Asclepiadaceae	Latex	Small branches are cut to yield latex.	Apply latex on the joints.
	Brassica juncea (L.) Czern. (Aavaalu) Brassicaceae	Seeds	250gms of onion bulbs are ground, filtered and the extract is mixed with 250gms of mustard oil. The contents are heated gently on a low flame for about 30min until it turns to brown color.	Massage the knees with the oil one or two times a day depending on the severity of the problem. Use for one month.
	Allium cepa L. (Ulligadda) Liliaceae	Onion bulb		

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Excess body heat	Cocculus villosus dc. (dussari teega) Menispermaceae	Leaves	Crush few leaves in a cup of water with hands until the contents turn to semi-solid. fresh preparation is needed every time.	Eat the semisolid soon after preparation. Two cubes of 1sq.inch, orally, once in a day. Dose is given on every alternate day for 3days.
	Cuscuta reflexa Roxb. (Passitiga) Convolvulaceae	Whole plant	Cuscuta shoot extract in water.	One tea cup, once daily, for five days.
	Aloe barbadensis MILL. (Kalamanda) Liliaceae	Leaves	Peel the fleshy leaves and eat the soft tissue.	One table spoon, once daily for two weeks.
	Phoenix acaulis Roxb. (Jitteesam) Aracaceae	Roots	Root extract of the plant in water.	One tea cup, once daily, for five days.
Diabetes	Andrographis paniculata (Burm.f) Nees. (katikaroni) Acanthaceae	Leaves	Fresh leaves are ground to make small tablets.	Tablets of 1cm diameter are taken orally twice daily or dose depending on the severity
Cataract	Argimone mexicana linn. (Urla vinjara/ mullu pucha) Papaveraceae	Shoot	Exudate from the cut portions of shoot.	Fresh exudate is applied on the edge of eye lids twice daily, for 3 days
	Gymnema sylvestre r. br (Podapatri) Asclepiadaceae	Leaves	Fine paste of all the three types of leaves is made separately, in equal quantities and mixed together.	Fine paste is applied on the edge of eye lids every day at bed time. Used for about two weeks or until eye discharge is stopped. Final preparation can be preserved in air tight bottle.
	Momordica charantia L. (Kakara) Cucurbitaceae	Leaves		
	Ricinus communis L. (Aamudamu)\ Euphorbiaceae	Leaves		
Pregnancy disorders in women	Mangifera indica L. (Maamidi) Anacardiaceae	Bark	About 10 x 5 inch Fresh bark of Mangifera indica is ground with a pinch of edible Lime (Calcium Hydroxide, CA(OH)2) with little water and filtered. Fresh preparation is made each time.	One tea cup once daily, on empty stomach, for 3days.
Piles	Ficus benghalensis L. (Marri chettu) Moraceae	Bark	Bark of the plant is dried and burned to make powder. One spoon of powder (ash) is mixed in a cup of water and a little rock sugar is added. Ash can be preserved for a longer time in dry condition.	One cup of above preparation is taken orally, twice a day for five days. The powdered ash made in to paste with ghee and is applied superficially on the piles.
Menstrual disorders	Aloe barbadensis MILL. (Kalamandha) Agavaceae	Leaf	The succulent leaf of aloe is peeled off and the soft tissue is taken orally along with curcuma powder and ghee. 50gms of aloe pulp is mixed with one spoon of ghee and a pinch of curcuma powder and mixed well.	The preparation is taken before breakfast, once daily during the period of menstruation. It is continued for 3 consecutive months.

convenience. Plants were identified and authenticated with the help of the taxonomists of the Department of botany, Osmania University, Hyderabad.

RESULTS AND DISCUSSIONS

The data collected is presented in table.1. Thirty two plant species belonging to twenty three families are employed in thirty one different formulations to cure fourteen types of ailments. Species belonging to Euphorbiaceae are the most used followed by Verbenaceae and Cucurbitaceae. Some of the herbal formulations for the chronic ailments are found to be new and first of their kind in terms of plant, part used, preparation or administration

Out of 31 types of the drugs recorded, 23 preparations are solo drugs and 8 of them are mixed herbal formulations. Implication of dosage and the formulation also varied with the severity of the disease. Herbal formulations differed slightly among different healers of the same tribe, however the formulations were finalized based their expertise and successful cases. According to the healers, more than one drug is available against each therapeutic indication and the efficacy of the drug depends on the Age, sex and also severity of the problem. Formulations involving more than one plant were common, which is comparable with the findings of

Jain (1991) and others. Similar studies were conducted by Manjula and Estari (2013) on Koya tribes of medaram and narlapura villages of warangal district.

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CONCLUSION

The ethnobotanical knowledge of the tribe was found to be valuable, as it is not explored till date. Though the tribe is mingled with local people and adapted the local culture, especially the elderly still nourishes their herbal practice and uphold their culture. The traditional healers of the Yerukala tribe further claimed the right over the knowledge of herbal preparations. Much of the data recorded would be useful for further research in pharmacology, phytochemical studies and serve as potential source of future drugs.

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