USE OF TRADITIONAL MEDICINE IN FEVER

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INTRODUCTION:

Malaria is the most common cause of fever in India and is an age old problem in India claiming thousands of life over the years ^{1,2}. WHO launched its first ever comprehensive traditional Medicine strategy in 2002 strategy to assist countries to gather and preserve knowledge on such practices with the hope to develop a good database for finding antimalarial properties in future in wake of drug resistance. Majority of the rural and tribal in rural areas have vast store of knowledge and practice of traditional medicines as it is cheaper and easily accessible to them ^{3 4 5}. Traditional Medicine often becomes the first source of treatment for these communities. The WHO estimated that 80% of the world's population use botanical medicines for their primary health care needs, malaria treatment inclusive⁶. The current study was therefore undertaken with an objective to find out the knowledge and practices of traditional medicines among rural and tribal communities for fever and the factors influencing such practices.

KEY WORDS: Malaria, Traditional Medicine, Fever, Ethnopharmacology

MATERIAL & METHODS:

A community based cross-sectional study was undertaken from June 2009 to May 2010 in Rani Community Development Block which is the Rural Field practice area of Gauhati Medical College, Assam. The Block has 96 villages with total population of 86,539 and literacy rate is 66.8% (2001 Census). The block has 18% tribal population residing in 36 villages.

Considering expected frequency as 50%, by using Epi Info Version 7 sample size was calculated to be 300 (95% confidence level, confidence limits of 5.65%). To get a representative population, the households were selected by Proportionate Probability Stratified Random Sampling technique from 16 villages. The 16 villages together formed a uniform composition, firstly in terms of tribal and non-tribal study subjects and secondly in terms of easier and more difficult access to health services. Stratification was done based WHO Protocols and methods of malaria situation analysis ⁶. Head of the household was interviewed and data was collected in a pre-tested and predesigned proforma regarding socio-demographic characteristics, knowledge and practices of

SHORT COMMUNICATION

traditional medicines in fever and in known malaria, factors influencing their use. Also the herbs and plants that are used was identified and recorded. However the pharmacological property of these plants and herbs are out of the scope of this study and review of Botanical Plants literature was done to find out available data on its use and medicinal properties. Statistical Analysis of the data was subjected to descriptive analysis and Epi Info Version7.

RESULTS:

The Socio demographic profile of the study population is shown in Table 1. Among the 150 tribal and 150 non-tribal households visited it was found that literacy level of head of the household was 82.7% and 92.6% respectively, with total literacy rate of 87.7%. According to occupation of the head of the families it was found that majority are cultivators (51.2%) among the tribal and businessman (40.7%) among the non-tribal communities and 24 % and 12.6% of the tribal and non-tribal families are living below poverty line (income less than Rs 228.9 per capita per month at 1993-94 prices). The respondents belonged to the age group of 19 -59 years, of which, among the tribal 61.4% are males and 38.6% are females while among the non-tribal respondents, 72% are males and 28% are females. Majority of the tribal respondents belonged to Hindu (82.4%) and rest were Christian (21.3%) whereas among the non-tribal respondents majority were Hindu (86%) and the rest Muslim (14%).

Table 2 shows that knowledge and practice of traditional medicine. Out of the 300 households visited only 49 (16.3%) households knew of traditional medicines used in fever. Out of these 49 households, majority, 38 (25.3%) belonged to the tribal community while 11 (7.3%) belonged to non-tribal community. However, out of the 49 households, only 8 (5.3%) of the tribal households and 3 (2%) of the non-tribal households are currently involved in collection and preparation and distribution of the medicine prepared from the herbs. The names of the herbs and plants used and the mode of preparation and administration was demonstrated and explained by them.

The remaining 251 (83.7%) of the respondents did not have any faith in traditional medicines for treatment of malaria and they neither had any knowledge of these remedies. Further, it must be mentioned that although use of traditional medicines was reported by 49 households, it is usually used as an initial management; if fever does not improve in next 2-3 days then they opt for allopathic medicines.

Table 3 shows the common factors influencing the practice of traditional medicines for fever. However, 40 (81.6%) respondents, 32 (84.2%) tribal and 8 (72.7%) non-tribal respondents said they would also prefer to use traditional medicines as an adjunct to antimalarials if diagnosed as malaria fever.

In this study 6 botanical plants that are practiced in the study area were identified and recorded. Table 4 shows the different plants and herbs that were identified. These are *Murraya koenigii*, *Vitex negundo*, *Centella asiatica*, *Azadiracta indica*, *Ocimum sanctum*/*Ocimum basilicum* and a plant known as *Tupurilata* or *Panipanta* locally (scientific name unknown) are identified to be used for treatment of fever and malaria as home remedy.

It was found that in case of the plant *Tupurilata* (local name), it was made into a thin paste mixed with coconut oil and is applied over the scalp of infants and young children with high fever when parents fear to giving allopathic medicines because they believe them to be having adverse

SHORT COMMUNICATION

side effects. The other plants and herbs like Narasingha, Pasotia are grinded together applied on scalp or body to get relief from headache and bodyache associated with fever. Whereas Manikmoni, Neem and Tulsi taken orally in the treatment of persistent fever for young children as well as adults by grinding and mixing them together and making a decoction and taken orally to get relief from fever.

DISCUSSION:

The results of this study revealed that knowledge of traditional medicines was present only in 49 (16.3%) of the respondents while only 11 (3.6%) practiced it in their homes recently. Similar result was found in another study where 2.1% of the tribal community used local herbs for treatment of malaria⁷. This value is comparatively less than the findings in other studies in Assam where initial treatment through traditional healer (Vaidya) was found in 39.2%⁸. The remaining 97% of the respondents did not have any knowledge about these traditional medicines used nor believed that they can be helpful in malaria treatment.

The decreasing knowledge and practice of traditional medicines may be due to increased malaria awareness campaigns in recent years and also due to high literacy rate of the study population.

However in this study none of the respondents said that they will depend solely on TM if fever is known to be due to malaria which is a positive finding in this study. After initial home management if fever does not improve in 2-3 days than they opt for allopathic treatment from doctor. This shows that access to early diagnostic facility would prevent the morbidity and mortality that occurs due to delay in diagnosis. The factors like severity of fever, associated symptoms of jaundice, infants and young children with persistent fever and fever in elderly people and fear of side effects of the antipyretics and anti-malarials influenced the use of traditional medicine. They are of the opinion that these medicines are safer to give to infants rather than antimalarials as they seen side effects after using these. Similar finding was observed in Nigeria⁹. Affordability of medicines was not a factor as they were aware of the free antimalarials available at the health center.

Regarding the medicinal value of the plants used it was found that some of them indeed were found to be having some benefit in treatment of fever and even in malaria.

Ocimum sanctum, locally known as "Tulosi" was found to be having many properties including antipyretic and anti-malarial activity against *P. falciparum* and *P. vivax*^{10,11,12}.

Similar use for fever and cough was also found in Arunachal Pradesh among Khamti tribes in Lohit District¹³ and in rural area of Tamil Nadu¹⁴. In another study insecticidal property of tulsi was also found¹⁵.

Azadirachta indica, locally known as "neem" was also found to exhibit antimalarial activity by inhibiting the growth of *P. falciparum*¹⁶ and even against drug resistant strains of *P. falciparum*^{17,18}.

Vitex negundo, locally known as "pasotia" meaning five leaved plant, Ayurveda it is called nirgundi and in the west known as Chastetree, has proved to be useful in fever, spleen enlargement and convulsion¹⁴ and in malaria¹⁹. Besides this it was also found to have insecticidal and pesticidal properties by other studies^{20,21,22}.

SHORT COMMUNICATION

Centella asiatica, locally known as “manikmoni”, was also found to be useful malarial fever 23, 24, 25.

Murraya koenigii, locally known as “Narasingha” in this study area was also found to be having anti-inflammatory property and hepatoprotective²⁶.

A study in Africa has shown that traditional medicine can reduce 1 million malaria deaths. In rural Tanzania a study about traditional Masai medicine showed 48% children already had knowledge about these plants which have been preserved in the UN database for future reference²⁷. “Tupurilata” was not found in any database and it is a new plant found in this study which needs to be studied. B N Prakash, a researcher with the foundation for the revitalization of Local Health Tradition, based in Bangalore found Guduchi (*Tinospora coeditia*) to have shown to reduce malaria related deaths by 5 to 10 times.

CONCLUSION:

The study indicates that knowledge and practices regarding traditional medicines for malaria or fever has significantly declined in the study population. The study indicates that delay in malaria diagnosis may be one of the causes of depending on traditional medicine which can be improved by making easier access to early diagnosis. That the use of traditional medicines does more damage than good does not hold good in the current scenario when many studies did reveal their usefulness. But certain remedies which have not been tested for efficacy is not encouraged so vigorous research on the efficacy of traditional plants on malaria treatment should be carried out to ascertain their usefulness. Ethno-pharmacological studies are encouraged to determine the usefulness these traditional remedies, as few of these were found to be having some anti-malarial property. The commonly used plants are brought out in this study along with their use. For this purpose a book called “Traditional medicines and plants and malaria” by Merlin Wilcox, Gerard Bodeker and Phillipe Rasanova provides guidelines on how to conduct such studies.

TM practice is an established health care system in India and is fast growing importance in the western world. India can therefore contribute immensely for development and research for alternative malaria treatment.

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SHORT COMMUNICATION

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SHORT COMMUNICATION

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SHORT COMMUNICATION

Tulsi (Ocimum sanctum/ Oc. basilicum)

Manikmoni (Centella asiatica)

Mahaneem (Azadiracta indica)

Pasotia (Vitex negundo)

Narasingha (Murraya koenijia)

Tupurilata (Scientific name unknown)

SHORT COMMUNICATION

Table 1. Socio-demographic profile of the study population

Socio demographic profile	Tribal (150)		Non-tribal (150)		Total (300)	
	No.	(%)	No.	(%)	No.	(%)
Religion						
Hindu	118	(78.7%)	129	(86%)	247	(82.4%)
Muslim	-	-	21	(14%)	21	(14%)
Christian	32	(21.3%)	-	-	32	(21.3%)
Sex						
Male	92	(61.4%)	108	(72%)	200	(66.7%)
Female	58	(38.6%)	42	(28%)	100	(33.3%)
Age range (years)						
19-28	15	(10.0%)	9	(6.0%)	24	(8.0%)
29-38	44	(29.2%)	49	(32.7%)	93	(31.0%)
39-48	52	(34.8%)	52	(34.8%)	104	(34.7%)
49-58	28	(18.8%)	26	(17.3%)	54	(18.0%)
>59+	11	(7.2%)	14	(9.2%)	25	(8.4%)
Education Level						
Illiterate	26	(17.3%)	11	(7.4%)	37	(12.4%)
Primary School	56	(37.3%)	35	(23.3%)	91	(30.4%)
High School	44	(29.3%)	57	(38.0%)	101	(33.7%)
HSCL passed	16	(10.7%)	21	(14.0%)	37	(12.4%)
HS passed & above	8	(5.4%)	26	(17.3%)	34	(11.4%)
Occupation						
Cultivator	77	(51.2%)	47	(31.3%)	124	(41.3%)
Daily wage earner	62	(41.3%)	19	(12.7%)	81	(27%)
Skilled labour	5	(3.3%)	2	(1.3%)	7	(2.3)
Service	26	(17.3%)	37	(24.7%)	63	(21%)
Business	10	(6.6%)	61	(40.7%)	71	(23.7%)
Others*	17	(11.3%)	8	(5.3%)	25	(8.4%)

* fisherman, silkworm rearing, selling household produce like betel nuts and vegetables, agricultural labourer, income from house rent and income from pension.

SHORT COMMUNICATION

Table 2. Head of household having knowledge and practice of traditional medicine in fever

Traditional Medicine		Tribal (n=150)		Non-tribal (n=150)		Total (N=300)	
		No.	%	No.	%	No.	%
Current knowledge	Yes	38	25.3	11	7.3	49	16.3
	No	112	74.7	139	92.7	251	83.7
Practicing within household	Yes	8	5.3	3	2	11	3.6
	No	142	94.7	147	98	289	96.3

Table 3: Reason for use of traditional medicines in fever

Variables	Tribal (n=38)		Nontribal (n=11)		Total (N=49)	
Very high fever in young children	29	76.3	2	18.1	31	63.3
Fever associated with jaundice	10	26.3	2	18.1	12	24.5
Fear of side effects of allopathic drugs	20	52.6	10	90.9	30	61.2
Use side by side with allopathic treatment	32	84.2	8	72.7	40	81.6
Side effects of Antimalarials drugs	20	52.6	10	90.9	30	61.2
Fever in Elderly with poor physical status	10	26.3	4	36.4	14	28.6

*Multiple responses

SHORT COMMUNICATION

Table 4- Showing information collected about the botanical plants used.

Local name	Scientific name	Parts of plants used.	Mode of use
Panipanta/ Tupurilata	Unknown	leaf is the useful part.	Leaf is made to a thin paste, after mixing with oil and applied to the scalp
Narasingha	Murraya koenijia	leaf and stem	Leaves are eaten directly or by boiling in water and making a paste
Pasotia	Vitex negundo	leaf	Leaves are eaten directly as vegetable or boiled and thin paste made
Manikmoni	Centella asiatica	leaf	A paste of the leaves are made and given empty stomach.
Mahaneem	Azadiracta indica	leaves, stem and roots	Boiled in water and the water is given to drink
Tulsi	Ocimum sanctum/ Ocimum basilicum	leaves	Leaves are eaten directly.