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Role of some ethno medicines used by the Santal tribal people, of the district Bankura, W.B., India, for abortifacient purposes

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Abstract

Bankura is one of the Tribal rich districts of West Bengal, India. Amongst the various tribal communities, the Santal Tribal community, have a good knowledge about the medicinal uses of the plants for various purposes.

A detailed survey work of the Dist. Bankura was made during the period 2003-2006. With the help of various questionnaires, the Tribal medicine man/woman were asked about the medicines used for various ailments, especially for the antifertility purposes. Most of them do not know the mechanism of action of the medicines prepared by them for the antifertility purposes but they are quite confident about the efficacy of the plants for many years.

The medicine men of the Santal Community do not want to express their traditional knowledge to the common people. But for the scientific studies, the ethno medicinal use of the plant parts or products presented here are mainly for the abortive purposes.

Keywords: Antifertility, Abortive, Ethno medicine, Ethnic community, Ojha, Traditional Knowledge.

Introduction

Considering the economic importance of the people of India, the use of traditional medicines gains its importance. Although modern medicines are widespread but traditional tribal medicines still exist in many developing and developed countries across the world. The main ingredients of the tribal medicine are derived from various plant sources. Over the centuries the tribes have developed their own system. Now-a-days tribal medicines are making dramatic comeback and Scientists are taking the natural products, analyzing them and trying to apply for curing from severe dreaded diseases like cancer, AIDS, hepatitis, rheumatoid arthritis and neuronal diseases.

Ethno botanical studies were carried out by some scientists in "Garo" ethnic community living in Madhupur, Tangail district, Bangladesh and the tribal rich area of southern Rajasthan for gaining information on ethnosexecological herbal medicines [1, 2]. The ethanolic extract of the powdered roots of *Cassia occidentalis*, *Derris brevipes* and *Justicia simplex* possess more abortifacient effect than the anti-implantation activity [3]. Some investigators [4] pointed out the inactivation and suppression of reproductive system by the roots of *Moringa oleifera* and usually used by most of the tribal people of the state of West Bengal. Dhall and Dogra [5] mentioned one plant, *Vicoa indica* belonging to family Compositae, used by the adivasis of the state of Bihar, to produce sterility.

Actually the tribal people are the real custodian of medicinal plants. They are very shy and have a traditionally strong belief of their religious rituals and own medicinal practices. In general, most of the tribes show some similarities in regard to medicines but the actual application differ with the tribes and localities.

Some of the districts (especially Bardhaman, Purulia, Paschim Medinipur, Birbhum and Bankura) of West Bengal are inhabited by various types of tribal people. Amongst them Santal population are quite preponderant. The tribal people of these districts have their own culture and tradition also. Indigenous medicine men and women of these tribal people have their own procedures to cure their fellow people. The medicine which is used by them is unique and they are quite confident. Lots of medicines have been used for antifertility purposes but few of them are used for abortifacient purpose. The present study has been dealt with the medicines prepared from some plant parts and other ingredients have been mainly used for the abortifacient activity.

Methodology

In order to make an on the spot survey regarding the folk utilization of the plants used by the Santal tribal people of the remote villages of the district Bankura several field surveys were conducted during the period 2003-2006. The data were collected through various questionnaires (interview method) to the informants like Ojha (medicine men), Mukhya, Vaidya, Gunin, Herbalist and local people. The informants and facilitators (interpreters) helped us to collect the plants and plant parts mainly for the contraceptive and especially for the abortive purposes.

The collected specimen were processed and preserved as the

herbarium preparation and carefully preserved in the Department of Zoology, University of Kalyani for future reference. Identification of plants was confirmed by Prof. G.G. Maiti, Professor of Botany, University of Kalyani. Identified plant species have been described from “Bengal Plants” [6], “Flora of Bankura District” [7].

Location

Bankura district is located in the Western part of the State of West Bengal. It is bounded by latitude 22°38' and longitude 86°36' E to 87°47' E.

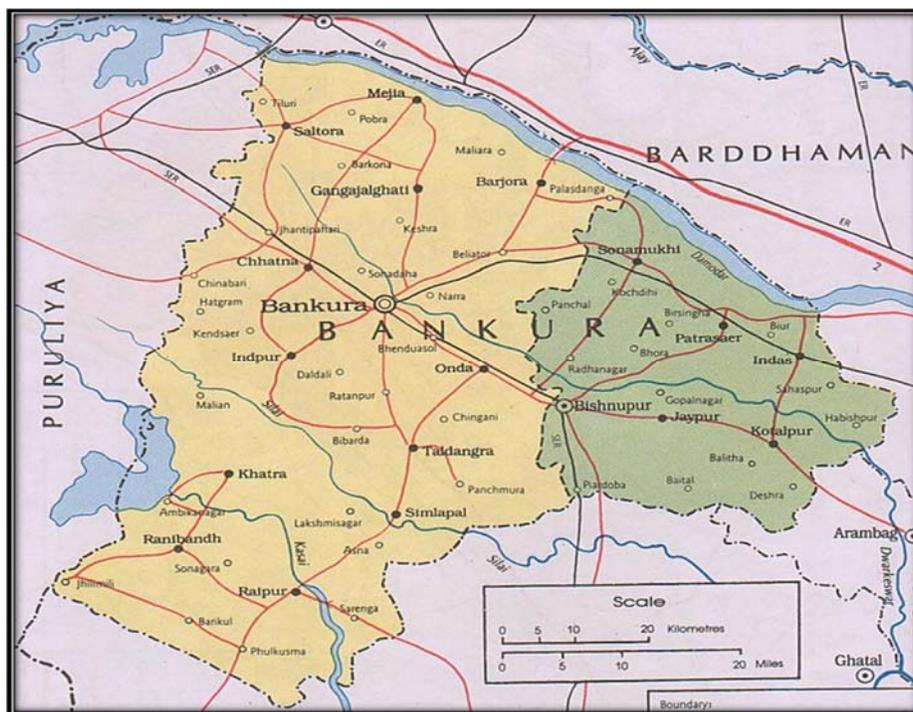


Fig: Map of the District Bankura, W.B., INDIA.

Topography

The district Bankura has five small hills. They are Biharinath, Susunia, Koro, Masak and Lady Hill.

Weather and Climate

The tropic of cancer passes almost through the middle of the District. The seasons of the Bankura district are generally distributed as ‘hot summer’ (April- May), ‘monsoon’ (June-September) and ‘cold season’ (November-February). The humidity is usually medium to high and the rainfall is usually well distributed. The climate of the district Bankura is generally healthy.

People

District Bankura provides shelter to the different tribal people. The tribes reside in this district are Santal, Munda, Lodha, Oraon, Bhumiz, Kora, Birhor, Sabar, Bedia, Karmali, Lohara and Mahali. Amongst these tribal people, the Santals are quite preponderant.

Results

The results of various abortifacient medicines provided by the Santal Medicinemen/women are mentioned in the Table.No.1. Figures (Figs. 1, 2, 3 & 4) of some abortifacient plants have been showed in this section.

Table 1. Report of the Santal Tribal medicine men/women for abortifacient purposes

Case Report No.	Plants Used		Talans Used	Preparation of Medicine	Results
	Common Name	Scientific Name			
A1	Arhar	<i>Cajanus cajan</i> L. Millsp. (Fabaceae)	Golmarich <i>Piper nigrum</i> L. (Piperaceae)	Skin of Arhar, roots of Iswarmul and golmarich are grinded together in the powdered form and used for three consecutive days.	It causes abortion up to 2-3 months of pregnancy
	Iswarmul	<i>Aristolochia indica</i> L. (Aristolochiaceae)			
A2	Pepe	<i>Carica papaya</i> Linn. (Caricaceae)	Golmarich <i>Piper nigrum</i> L. (Piperaceae) Mustard oil	Latex of green Pepe is mixed with paste of whole plant of Swarnalata. The mixture is coated on fresh root of Chirchiti and	It causes abortion up to five months of pregnancy. It leads to the
	Sarnalata	<i>Cuscuta reflexa</i> Roxb.			

		(Convolvulaceae)		properly placed in the vagina of the pregnant tribal women for few hours.	expulsion of dead foetus also.
	Chirchiti	<i>Achyranthes aspera</i> L (Amaranthaceae)			
A3	Ashoka	<i>Saraca asoca</i> , (Caesalpinaceae)	Golmarich <i>Piper nigrum</i> L. (Piperaceae) Makradhaj	Powder of dried Ashoka bark, Kachnar (<i>Bauhinia variegata</i>) bark and Rahini bark are mixed in the proportion in 1:1:1. One spoon powder mixed with one glass gruel of rice is taken orally. One glass of mixture is taken twice a day for 2-5 days.	It causes spontaneous abortion.
	Kachnar	<i>Bauhinia variegata</i>			
	Rahini	<i>Soymida febrifuga</i> A. (Meliaceae)			
A4	Chita	<i>Plumbago zeylanica</i> Linn. (Plumbaginaceae)	Opium <i>Papaver somniferum</i> Linn., Labanga <i>Eugenia caryophyllata</i> Thumb., Catachu <i>Acacia catechu</i> Willd.	Root paste of Chita and Iswari is mixed with the talans mixture is taken orally.	It causes abortion up to 2-3 months of pregnancy.
	Iswari	<i>Aristolochia indica</i> Linn. (Aristolochiaceae)			
A5	Pepe	<i>Carica papaya</i> Linn. (Caricaceae)	Golmarich <i>Piper nigrum</i> L. (Piperaceae) Labanga <i>Eugenia caryophyllata</i> Thumb.	Fresh latex of green Pepe is mixed with paste of Til. This paste is then mixed with five Golmarich and five Labanga powder. Two teaspoon of the mixture is to take for consecutive three days.	It causes abortion up to 2-3 months of pregnancy. Abortion with this mixture will not cause any toxic effects because it also helps to expel the dead fetus from the uterus.
	Til	<i>Sesamum indicum</i> Linn. (Pedaliaceae)			
A6	Krishnatulsi	<i>Ocimum calamendruscerium</i> ..(Lamiaceae)	Golmarich <i>Piper nigrum</i> L. (Piperaceae)	Fresh and dried roots of Tulsi and Jiti are grinded and decoction is made with water and given to a pregnant women.	It causes abortion up to 2-3 months of pregnancy.
	Jiti	<i>Caesalpinia pulcherrima</i> Linn (Fabaceae)	Jaephol <i>Myristica fragrans</i> Houtt.,		
A7	Babul	<i>Acacia nilotica</i> Linn., (Mimosaceae)	Hing <i>Ferula assafoetida</i> Linn.	Gum of Babla plant, mixed with Hing should take on a four inches stick. It should be inserted into vagina for three days.	It can abort pregnancy up to two months. The result is quite successful.
A8	Sibjata	<i>Rungia pectinata</i> Linn. (Acanthaceae))	'Kalojira <i>Nigella sativa</i> Linn..	Roots of Sibjata and leaves of Kalmegh and mentioned talans are mixed to make 21 pills. Three pills have to take per day for seven days.	This mixture will abort pregnancy. It has no side effects. The mixture will be more effective if it is taken with juice of banana plant root.
	Kalmegh	<i>Andrographis paniculata</i> Burn. f. (Acanthaceae)	Mouri <i>Foeniculum vulgare</i> Mill. Michri (recrystalised cane sugar)		



Fig 1: *Andrographis paniculata* Burn. F.
(Local name: Kalmegh)



Fig 2: *Carica papaya* L.
(Local name: Pepe)



Fig 3: *Cuscuta reflexa* Roxb.
(Local name: Sarnalata)



Fig 4: *Ocimum calamendrus* cerium.
(Local name: Krishnatulsi)

Figs.: Some abortifacient plants

Discussion

A close scrutiny of the field survey of the district Bankura, West Bengal, India, clearly indicate that various plants which are grown on the slopping hilly regions have the unique property for their anti-fertility as well as abortive functions. Usually contraceptives act to prevent conception whereas abortifacient act to expel an implanted embryo from the uterus. All the medicines which have been used for contraceptive purposes may not be used as an abortive agent. Numbers of medicines for abortive purposes are very low but very authentic according to the report of the medicine men and women of the Santal Tribal Community.

Amongst the plants used by the tribal people of Bankura district some of them already have been described for their antifertility functions. Ayurvedic herbal formulations and single plant drugs used traditionally in the treatment of gynaecological disorders were described by some workers [8]. *Abroma augusta*, *Abrus precatorius* L., *Butea monosperma* were experimentally proved as a very good womb purifier and contraceptive medicines [9]. Antifertility functions of *Momordica charantia* was observed by many scientists [10-15]. The role of Kalmegh (*Andrographis paniculata*) was also pointed out as an antifertility as well as pregnancy-terminating effects in the female mice [16].

Anti implantation activity in mice was found on the petroleum ether and chloroform extracts of *Abroma augusta* (Linn.) Linn. f. (root), in the benzene extract of *Achyranthes aspera* Linn. (Flower), and alcohol extract of *Woodfordia fruticosa* Linn. Kruz (flower), *Abroma augusta* also showed abortifacient activity [17]. The anti implantation activity of the methanolic extract of *Blepharispernum subsessile* rhizomes and isolated active constituent desmethyloencecalin was described by some workers [18]. Juice, peel and oil extracts of *Punica granatum* inhibit pregnancy [19]. *Moringa oleifera* root was shown to have unique estrogenic, antiestrogenic, progestational, and antiprogestational activities [20].

Several herbs are mentioned in different literature, which have abortifacient effect [21-26]. The medicines that have been used so far are mainly the portion of roots. Although some have used portion of other plants (e.g., parts of stem, resins, leaves, flowers, seeds etc.). No clear correlation can be made with other medicines used by other communities. Whatever may be the methods and plant parts, it may be assumed that there is a

direct action of these medicines on the uterine wall. But there is no clear evidence whether these products act from the pituitary level or alteration of some hormones in the blood. However, hormonal influence may be implicated [27].

In this study many prescriptions have been presented by various Santal medicinemen/women. Excepting a few, most of them have not been tested so far. But the tribal medicine men and women of the district Bankura have their belief and confidence about the anti implantation activity of the plant parts. It is the immense property of their traditional knowledge, which can form the basis for the development of new medicinal products. To pin-point this idea more co-ordinated multidimensional research work should be carried out for the betterment of the mankind.

Conclusions

Traditional knowledge of Santal Tribal People of the district Bankura, W.B., India has an immense importance in the control of fertility as well as an anti implantation activity. Although no detailed scientific studies have been made but the medicine men and women of the Santal Community have their belief and confidence about their medicines prepared (from the mixture of plant parts and some ingredients commonly called as talans) by them for abortifacient activity.

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References

1. Anisuzzaman M, Rahman AHMM, Rashid M, Naderuzzaman ATM, Islam AKMR. An Ethnobotanical Study of Madhupur, Tangail. Journal of Applied Sciences Research. 2007; 3(7):519-530.
2. Jain A, Katewa SS, Chaudhury BL, Galav P. Folk herbal medicines used in birth control and sexual diseases by tribals of southern Rajasthan, India. Journal of

- Ethnopharmacology. 2004; 90(1):171-177.
3. Badami S, Aneesh R, Sankar S, Sathishkumar MN, Suresh B, Rajan S. Antifertility activity of *Derris brevipes* variety coriacea. *J Ethnopharmacol.* 2003; 84(1):99-104.
 4. Shukla S, Mathur R, Prakash AO. Antifertility profile of the aqueous extract of *Moringa oleifera* roots. *J Ethnopharmacol.* 1988; 22:51-62.
 5. Dhall K, Dogra M. Phase I and II clinical trials with *Vicco indica* (Banjauri), a herbal medicine, as an antifertility agent. *Contraception.* 1988; 37(1):75-84.
 6. Prain D. *Bengal Plants.* Bishen Singh, Mahindra Pal Singh, Dehradun, India, 1903, 1-2.
 7. Sanyal MN. *Flora of Bankura District, West Bengal.* Bishen Singh, Mahendra Pal Singh, 23-A New Connaught Place, Dehra Dun, India, 1994.
 8. Jadhav AN, Bhutani KK. Ayurveda and gynecological disorders. *Journal of Ethnopharmacology.* 2005; 97(1):151-159.
 9. Selvam ABD. Phcog Rev.: Review Article Inventory of Vegetable Crude Drug samples housed in Botanical Survey of India, Howrah, *Pharmacognosy Reviews.* 2008, 2(3).
 10. Girini MM, Ahamed RN, Aladakatti RH. Effect of graded doses of *Momordica charantia* seed extract on rat sperm: scanning electron microscope study. *J Basic Clin Physiol Pharmacol.* 2005; 16(1):53-66.
 11. Bhakuni DS, Goel AK, Jain SK, Mehrotra BN, Patnaik GK, Prakash V. Screening of Indian plants for biological activity: Part XIII *Indian J Exp Biol.* 1988; 26(11):883-904.
 12. Koentjoro S. Perspectives of male contraception with regards to Indonesian traditional drugs. *Proc. Second National Congress of Indonesian Society of Andrology.* 1982; 12:2-6.
 13. Dixit VP, Khanna P, Bhargava SK. Effects of *Momordica charantia* L. fruit extract on the testicular function of dog. *Planta Med.* 1978; 34:280-6.
 14. Prakash AO, Mathur R. Screening of Indian plants for antifertility activity. *Indian J Exp Biol.* 1976; 14:623-626.
 15. Stepka W, Wilson KE, Madge GE. Antifertility investigation on *Momordica*. *Lloydia.* 1974; 37(4):645.
 16. Zoha MS, Hussain AH, Choudhury SA. Antifertility effects of *Andrographis paniculata* in mice. *Bangladesh Med. Res. Council Bull.* 1989; 15:34-37.
 17. Pakrashi A, Basak B, Mookerji N. Search for Antifertility agents from indigenous medicinal plants. *Ind. J Med Res* 1975; 63(3):378-81.
 18. Agarwal SK, Verma S, Singh SS, Kumar S, Keshri G. Antifertility chromene from *Blepharispermum subsessile*. *Fitoterapia.* 1999; 70(4):435-437.
 19. Lansky EP, Newman RA. *Punica granatum* (pomegranate) and its potential for prevention and treatment of inflammation and cancer. *Journal of Ethnopharmacology.* 2007; 109:177-206.
 20. Shukla S, Mathur R, Prakash AO. Biochemical and physiological alterations in female reproductive organs of cyclic rats treated with aqueous extract of *Moringa oleifera* Lam. *Acta Eur Fertil.* 1988; 19:225-232.
 21. Kirtikar KR, Basu BD. *Indian Medicinal Plants.* (1-4) Vols (2nd ed.) Bishen Singh, Mahendra Pal Singh, Dehradun, 1935.
 22. Nadkarni AK, Nadkarni KM. *Indian Materia Medica* 3rd ed. Published by Popular Book Depot, Bombay, 1954.
 23. Chopra RN, Nayer SL, Chopra IC. *Glossary of Indian Medicinal Plants.* C.S.I.R., New Delhi, 1956.
 24. Chopra RN, Chopra IC, Handa KL, Kapur LD. *Chopra's Indigenous Drugs of India.* U. N. Dhur & Sons. Calcutta, 1958.
 25. Jain SK. *Dictionary of Indian Folk Medicine and Ethnobotany.* Deep Publ. New Delhi, 1991, 1-311.
 26. Saxena HO, Brahman M. *Flora of Orissa, Orissa Forest Dev. Corp., Bhubaneswar* 1994; 2:993-995.
 27. Aguwa CN, Mittal GC. Abortifacient effects of the roots of *Momordica angustisepala*. *J Ethnopharmacol.* 1983; 7(2):169-173.