



Some lesser known oral herbal contraceptives in folk claims as anti-fertility and fertility induced plants in Bastar region of Chhattisgarh

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Abstract

The traditional knowledge prevailing among Gond tribes of Bastar region regarding use of various plants as anti fertility inducing agents and fertility inducing agents have been studied and described. Objective :The present study is result of documentation of indigenous knowledge about medicinal plants from Gond tribes of Bastar region Chhattisgarh state. Materials and method: The documentation of traditional knowledge from Gond tribes has been conducted during ethnobotanical studies. The information was collected by interviewing local vaidys and traditional herbal-healers prevalent in Bastar region. They have immense knowledge about plants and drugs the same are being utilized by tribals since last several centuries by collecting plants and their parts to prevent birth as oral contraceptive and anti-fertility agents and also as fertility inducing agent. Result and conclusion: The lesser known 22 herbal plants used by Gond tribes of Bastar 18 uses of plants as anti fertility inducing agent and 04 uses of plants as fertility inducing agent plants has been briefly described in the paper alongwith botanical names, vernacular name family and method of preparation of drugs and their dosages. The knowledge of plants used by traditional herbal healers for anti-fertility purposes, isolation of their active principles etc. would be of immense help to replace synthetic drugs.

Key words: Tribals, herbal drugs, folk-claim, fertility and anti-fertility inducing agent.

1. Introduction

In the twenty first century, a search has been made for plants used as anti-fertility and fertility inducing plants. It has been considered that herbal drugs are cheaper and safer as compared to synthetic drugs and may be used without any side effect. A section of indigenous people locally known as vaidys, ojhas and traditional

herbal healer has attained a valuable degree of perfection in use of fertility inducing as well as fertility inhibiting herbal medicines and drugs.

Bastar has gained a historical importance from ancient times. The tribals dominated in the region are Bhariyas, Bhumias, Birhor, Gond, Halba, Murias, Kamars etc The region is rich

in flora and fauna. Bastar region lies between 17°-45' to 20°-35' and 80°-15' to 82°-31'. The composite culture of people is reflected in various facets of socio-cultural activities.

A large number of herbal healers still exists in Bastar region of Chhattisgarh state. Since ancient time the herbal contraceptives are in practice by primitive society to avoid pregnancy. They mix honey with powder prepared from roots of babool tree and this paste is inserted in vagina of women to prevent conception [1,2].

Numerous ethno-botanists have conducted similar studies in different states of India. In the study conducted on the tribals of Gujarat and Rajasthan state it was found that they also use plants for oral contraceptive as a family planning measure in tribal pockets [3,4]. Studies conducted in Assam and north east region in Arunachal Pradesh has revealed that the region is very rich in flora and local people belonging to ethnic society have rich knowledge about herbal contraceptive and plants available are used for purpose of inducing fertility and anti-fertility agent.

These tribal herbal healers are known as *Vejal Vaidya* and had attained high degree of perfection in use of plants for birth control and sterilization of women and they belong to Mikirs and Boro tribes [5,6,7,8].

2. Material and method

2.1 Study area and period

The ethnobotanical studies were conducted in Bastar region in districts of Kanker-Bhanupratapur, Korar and Antagarh forest divisions and in Bastar-Kondagaon, Narayanpur and Jagdalpur forest divisions in tribal localities in villages of 1. Antagarh, 2. Bhaigaon, 3. Korar, 4. Bhanupratapur, 5. Narayanpur, 6. Sukma, 7. Charama, 8. Makadi, 9. Kondagaon, 10. Keshkal, 11. Jagdalpur. The tribal villages were surveyed through periodical

tours conducted in tribal localities during the period July 2001-March 2004. Special attention was paid to record information from local vaidys, ojha and traditional herbal healers.

2.2 Collection of Information

The information was documented involving field study by contacting and interviewing "Vaidyas" (Males), ojhas "Dai" (Females) for plants used as anti-fertility agent and oral contraceptive. The plants used for inducing fertility were also recorded. To establish identity some plants were collected with the help of herbal healers and practitioners for making herbarium.

The botanical names, vernacular names, family and method of treatment and mode of preparation of drug has been documented. The dictionary of Indian Folk medicines [9] and Indian Materia Medica [10] were consulted to find out the medicinal use of plants mentioned in the present paper and their documentation by different ethno-botanists who were in this field.

3. Observations

The information about medicinal plants, dosages and methods of treatment is described in two sub heads :

3.1 Plants used to induce anti-fertility.

3.2 Plants used to induce fertility.

3.1 Plants used to induce anti-fertility

During the study it is documented that some plants and their parts such as roots, leaves, fruits, oil-extracted from fruits, are found to possess some enzymes which inhibit fertility and acts as herbal contraceptive. The same is described as below.

A. Roots

a. Roots of small tree plant *Calotropis gigantea* (Linn) R.Br. (Family Asclepiadaceae, small perennial shrub, part used: Root as powder, collection number TFRI/ JBP/ BD2001/11) and sensitive plants *Mimosa pudica* Linn. (Family

Mimosaceae, herb, part used: Root as powder, collection number TFRI/JBP/BD/2001/17) are collected from forests by the tribals. About 4-5 pieces of the roots of both the plants are dried and powdered separately and then mixed in equal parts with candy sugar.

One tola (Ten gms) roots of each plant is weighed and then tablet is prepared from the paste. Three tablets is administered orally for 2-3 months regularly, empty stomach early in the morning by the women bearing 2-3 months pregnancy. It is reported that this treatment causes abortion in women having 2-3 months pregnancy.

b. Roots of perennial twinning climber *Abrus precatorius* Linn (Family Fabaceae, twinning climber, part used: Root as paste, collection number TFRI/JBP/BD/2002/03) and *Aloe vera* (Linn.) Burn. f. (Family Liliaceae, herb, part used Root as paste, collection number TFRI/JBP/BD/2002/10) are collected from forests. About 5-6 pieces of roots of size 15-20 cms in length are crushed and mixed to and paste is prepared.

About 50 g of molasses of 1-2 years old is mixed in the paste. The paste is divided into three equal parts and is administered orally for three consecutive days empty stomach early in the morning by the tribal women bearing 2-3 months pregnancy. It was observed that this treatment causes abortion in women having 2-3 months pregnancy.

c. The roots of *Amaranthus spinosus* Linn. (Family Amaranthaceae, herb, part used: Root as powder, collection number TFRI/JBP/BD/2002/12) are collected from forest. About 10-15 g of the roots are powdered and mixed with 15-20 ml of rice water and kept over night. This decoction water is regularly administered orally from third consecutive day after menstrual period, empty stomach early in the morning by women. It has been observed that root powder extract posses anti-ovulatory

properties and inhibits enzymatic activity which avoids pregnancy.

d. Roots of herbal plant *Plumbago zeylanica* Linn. (Family Plumbaginaceae, shrub, part used: Root as powder, collection number TFRI/JBP/BD/2001/20) are collected from forests. About 5-6 pieces of such roots weighing 10-12 gms. are powdered and mixed with 10-15 ml. rice water and is kept overnight. This water is regularly administered orally for three consecutive days during menstrual period empty stomach early in the morning by tribal women. It has been observed in tribal community that root powder of the shrub causes sterility in women.

B. Rhizomes

The rhizomes of *Curcuma longa* Linn (Family Zingiberaceae, rhizomatous herb, part used Rhizome: as powder, collection number TFRI/JBP/BD/2003/06) are collected from forest. About 8-10 pieces of rhizomes are washed, dried and powdered. 5-6 g of powder is mixed with 5 g of jaggery and is regulary administered orally for 4-5 days during menstrual period empty stomach early in the morning to women. The uses has been found to be very good herbal contraceptive.

In some villages it was found that Rhizomes of *Curcuma longa* Linn. (Haldi) are collected from forest by tribals, dried and crushed into fine powdered. About 10-12 g of haldi powder prepared from rhizome was mixed with fresh milk of cow and boiled. The milk on boiling when became warm was given 250 ml to women to drink early in the morning empty stomach right from the third day after mensus for a period of about 10-12 days turmeric powder.

It is reported by tribals that this treatment purifies blood and destroys pathogen. It has been found in tribal community that haldi powder is very good oral herbal contraceptive.

C. Tubers

The tubers of *Dioscorea bulbifera* Linn. (Family Dioscoreaceae, Climber, part used: tuber as powder, collection number TFRI/JBP/BD/2001/13) are collected from forests. About 8-10 tubers are washed, dried and crushed. One tuber is regularly administered orally for 4-5 days during menstrual period empty stomach early in the morning to women. It has been found that tuber powder of climber acts as herbal contraceptive.

D. Leaves

a. Leaves and branches of annual herb *Mentha arvensis* Linn (Family Dioscoreaceae, herb, part used: Leaves and branches as extract, collection number TFRI/JBP/BD/2003/13) are collected from forests by tribals. Leaves and branches are boiled and mashed. The extract is filtered with a piece of cloth and allowed to cool.

This extract is administered orally to women two hours before performing sexual intercourse. It is said that this extract acts as anti-ovulatory and inhibits enzymatic activity which avoids pregnancy. The extract has been observed as an excellent herbal contraceptive popular among tribal localities in villages surveyed in Bastar region.

b. Leaves of twinning climber *Cuscuta reflexa* Roxb. (Family Cuscutaceae, twinning climber, part used: leaves as extract, collection number TFRI/JBP/BD/2003/05) are collected from forest from tribals. Leaves are boiled and mashed. The extract is filtered with a piece of cloth and allowed to cool. The filtered extract is again boiled for 2-3 h and allowed to cool. The extract is regularly administered orally to women, early in the morning empty stomach right from the third day after menses for 21 days. It has been observed that this extract acts as anti-ovulatory and avoids pregnancy and makes tribal women permanently sterile.

c. Leaves of shrub *Plumeria rubra* Linn. (Family Plumbaginaceae, shrub, part used: leaves extract, TFRI/JBP/BD/2004 /11) are collected from forest. About 10-12 g of leaves are boiled and kept over-night in 250 ml of water. The leaves are crushed in the morning and extract is filtered. The filtered extract is regularly administered orally to women, early in the morning empty stomach right from the third day after menses for 15 days. It has been observed that this extract acts avoids pregnancy and acts as herbal contraceptive.

E. Fruits

Fruits of climbing creeper *Cucurbita pepo* Linn. (Family Cucurbitaceae, climbing creeper, part used: fruit as extract, collection number TFRI/JBP/BD/2004/04) are collected from forests by tribals and cut into small pieces of 5-6 cms length. One piece is daily soaked in water over-night. The soaked pieces are mashed, the extract is filtered and mixed with 250 ml of water and is again soaked for second consecutive night. This extract is orally administered for a period of 8-10 days empty stomach early in the morning to the women bearing 2-3 months pregnancy. It has been observed that fruit extract causes abortion in women having 2-3 months pregnancy due to presence of anti-fertility agents.

F. Seeds

a. Seeds of small tree *Vitex negundo* Linn. (Family Verbenaceae, small tree, part used: Seeds as powder, collection number TFRI/JBP/BD/2004/13) are collected from forest by tribals, dried and crushed to powdered. About 10-12 gms of this powder is orally administered for a period of 8-10 days empty stomach early in the morning to men. It has been observed that seeds powder when consumed of *Vitex negundo* causes sterility in men.

b. Seeds of tree species *Ficus religiosa* Linn. (Family Moraceae, tree species, part used:

seeds, collection number TFRI/JBP/BD/2004/0) are collected from forest by tribals, dried and mixed with seeds of small tree *Embelia ribes* Burm. f. (Family Myrsinaceae, small tree, part used: seeds, collection number TFRI/JBP/BD/2004/09). These seeds are roasted with suhag (borax) and is orally administered for a period of 8-10 days empty stomach early in the morning to women after 5th day of menstrual period. It has been observed that the seeds when consumed acts as herbal contraceptives which avoids pregnancy.

G. Seed Oil

Seeds of tree species *Azadirachta indica* (Linn.) A. Juss. (Family Meliaceae, tree species, part used: Seed for extraction of oil, collection number TFRI/JBP/BD/2004/06) are collected from forest by tribals. Seeds are crushed and oil is expelled from local ghani available in tribal villages. The extracted oil is applied for 10-12 days in genital parts of men and womb (uterus) of tribal women 1-2 h before sexual inter-course.

This treatment is given to women right from 3rd day onwards of menses till the date or period pregnancy is to be avoided. The oil extracted from *Azadirachta indica* contains azadirachtin which possesses enzymatic activity for preventing conception. It has been observed that the oil acts as herbal contraceptives and avoids pregnancy.

H. Gum

Gum exudates are collected from bark in trees species *Butea monosperma* (Lam.) Kuntze (Family Fabaceae, tree, part used: Bark-Gum, collection number TFRI/JBP/BD/2004/05). About 5-6 gms of gum collected from bark of trees are mixed with cow-milk. This mixed milk is regularly administered orally to women, early in the morning empty stomach right from the first day after menses for consecutive three days. It is said that by drinking such milk some

enzymatic activity takes place in women which prevents or inhibits conception. It has been observed that milk mixed with gum purifies blood and destroys pathogen, avoids pregnancy and acts as herbal contraceptives.

I. Bark

The bark is collected from trees of *Crataeva nurvala* Buch.-Ham. (Family Capparidaceae, tree, part used: Bark as powder, collection number TFRI/JBP/BD/2004/08) This bark is powdered and is regularly administered orally to tribal women, early in the morning empty stomach right from the first day after menses for three days. It is reported by tribals that this treatment purifies blood, destroys pathogen, avoids pregnancy and acts as herbal contraceptives.

3.2 Plants used to induce fertility

Plant leaves, dried tuberous roots and gum exudates are used by tribals to induce and restore fertility in women. These herbal treatments have been briefly discussed below as recorded during the study.

A. Roots

a. Tribals collect dried tuberous roots of climber *Asparagus adscendens* Roxb. (Family Liliaceae, climber, part used: tuberous root used as extract, collection number TFRI/JBP/BD/2002/06) from forests. About 10-12 roots are boiled in 1000 ml. of water for a period of 2-3 h. The tuberous roots are mashed and extract is allowed to cool. After cooling extract is filtered. About 250 ml. of this filtered extract is administered orally to women, early in the morning empty stomach to restore fertility. This process is repeated till conception takes place. It has been observed that this extract has restored fertility among tribal women who had failed earlier to conceive.

b. Tribals also collect dried tuberous roots of rhizomatous herb *Curculigo orchoides* Gaertn f (Family Amaryllidaceae, herb, part used:

tuberous roots used as baked roots, collection number TFRI/JBP/BD/2003/08) from forests. The tuberous roots are baked under the fire and mashed. About 5-6 mashed roots are administered orally to women, early in the morning empty stomach for a period of 10-12 days to restore fertility. It has been observed that baked tuber of species has restored fertility among tribal women who had failed earlier to conceive.

B. Leaves

Tribals collect 10-15 leaves from small tree species *Ardisia axyphylla* Roxb (Family Orchidaceae, small tree, part used: Leaves as extract, collection number TFRI/JBP/BD/2004/02 from forest. The leaves are boiled in 500 ml of water for 1-2 h. The boiled water is filtered by a clean piece of cloth. About 20-25 ml of this filtered extract is administered orally to women, early in the morning empty stomach right from the fifth day after mensus for a period of about 10-12 days. It has been observed that extract of species restores fertility in women who had earlier failed to conceive.

C. Gum Resins

Tribals collect gum resins exudated from tree species *Butea monosperma* (Lam) Kuntze (Family Fabaceae, tree, part used: Gum resin, collection number TFRI/JBP/BD/2004/07) from the bark of the tree. This gum-resin is applied 2-3 times daily in the uterus (womb) of women to strengthen female organs. It has been observed that in tribal women regular application of gum resins had restored fertility in women who had earlier failed to conceive.

4. Discussion

In the last two decades there has been an upsurge of such activities in search of ethno-medicinal drugs used for control of human population in different tribal regions [11,12]. The study conducted in Puri region of Orissa, it was found that use of oral contraceptives

for birth control as folk-medicine by primitive tribes are very popular [13,14].

Some of the ethno-botanists have earlier made attempts to document information on plants which are used in preparing anti-fertility drugs by using roots of plants for edible purpose which acts as food 1 in Abujmarh region of Bastar district by Abujh-maria tribe, the most primitive tribe of Bastar region in Chhattisgarh state [15,16,17]. The roots of many local species have been found to be used as oral contraceptive in states of Gujarat and Rajasthan [3, 4] used in family planning. The roots of some indigenous plants have been reported to act in checking pregnancy upto 2-3 months by several workers [2,4,9,11].

Rhizomes, tubers leaves of indigenous plants growing in Assam have been found to be used by Mikris tribes in North East to act as herbal contraceptive [5,7,8,9]. Bark of indigenous trees found in states of Assam, Maharashtra, Rajasthan and Gujarat [3,9,10,11] have been reported to possess properties as herbal contraceptives. Twenty five plant species with twenty six claims as abortifacient has also been documented in use by ethnic groups in five districts of western Uttar Pradesh [18].

In the present study 22 plants have been documented which are lesser known and 18 plants are used as herbal plant contraceptives and 04 plants as agents for inducing fertility in folk claims of Gond tribes of Bastar region.

5. Conclusion

The local vaiyds and traditional herbal healers prevalent in pockets of Gond tribe in Bastar region have immense knowledge about use of plants and preparation as drugs to be used as oral contraceptive and anti-fertility inducing agent. Ethno-medicinal surveys have added the knowledge about several plants which have been used in India by tribal people since centuries to prevent birth and also used as

fertility inducing agents. However, The establishment of their true identity and isolation of active principles in preparation of herbal drugs and tests and trials are required for proper use of these herbal medicines in formulation of drugs in near future.

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