

OBSERVATION ON THE TRADITIONAL HERBAL REMEDIES OF PAIN FROM KOCH BIHAR DISTRICT, WEST BENGAL

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ABSTRACT

The district of Koch Bihar is inhabited by five major ethnic communities viz. Kheria, Oraon, Rabha, Rajbanshi and Santal and traditionally they are dependent on herbal drugs for the treatment of different ailments including pain. During the present study 45 herbal formulations have been recorded from the ethnic medicine men and other resource persons of the villages which are effectively used for the treatment of seven categories of pain namely, body-ache, ear-ache, head-ache, rheumatism and gout, sprain, stomach-ache and tooth-ache. For the preparation of these formulations 47 species of Angiosperms belonging to 43 genera under 32 families are utilized and some of the species have more than one use. The formulations which are given for the treatment of patient are prepared either from a single plant (38

nos.) or in combination of other plants (7 nos.). A maximum of 11 formulations have been recorded for rheumatism & gout and 9 for stomach-ache. In the present communication scientific and vernacular name of the plants, the modes of preparation of medicine and doses have been provided.

KEYWORDS: Ethnic communities, Herbal Formulations, Pain, Koch Bihar, West Bengal.

INTRODUCTION

Pain is a general health problem which is manifested in different forms like body-ache, head-ache, stomach-ache etc. Gout and rheumatic pains are also common among the aged members of our society. To get relief from these pain intake of analgesic is a common practice in the modern world. Though these medicines provide instant relief to the patient but they have severe side effects also. Indiscriminate and prolonged intake of such pain killers

causes much damage to liver, kidney and other vital organs of our body. But in the Indian traditional system of medicine there are some herbal formulations which are very effective to combat different types of pain of the human body and they do not have any adverse side effects. On the other hand the ingredients of these formulations are easily available and cheaper than the pain killers. Now a day the modern society does not pay their attention about the efficacy of the traditional herbal therapy, so that it is restricted among the rural and ethnic peoples only. But due to modernization of ethnic society as well as acculturation of knowledge by the younger generation the traditional herbal remedy is under threat. It is an urgent need to record the information about the medicinal uses of the plants before they become lost forever. The present work is such as a small endeavour to record the herbal formulations which are safely used for the treatment of different types of pain from the ethnic peoples of Koch Bihar district, West Bengal.

Koch Bihar, a district of north-eastern part of the state of West Bengal under Jalpaiguri division is situated between $26^{\circ}32'46''$ to $25^{\circ}57'57''$ North latitude and $89^{\circ}52'00''$ to $88^{\circ}45'02''$ East longitude, covering an area of 3,386 sq km. Rajbanshi is the major ethnic community which constitute about 40% population of the district. The other ethnic groups are Kheria, Oraon, Rabha and Santal. Majority of them are dependent on herbal medicine which are generally prescribed by the ethnic medicine men locally known as "Kaviraj" or "Vaidya" for the treatment of different ailments including pains. The ethnic medicine men have a rich knowledge about the herbal formulations prepared from the plant parts which they inherited from generation after generation through practice and culture. During the last two decades documentation on the traditional herbal medicines practiced in the ethnic societies of West Bengal was done by several workers like Acharya and Mukherjee (2010), Bhakat and Pandit (2008), Bose *et al* (2015), Chakraborty *et al* (2003), Chatterjee and Mukherjee (2015), Das and Rahaman (2014), Das and Tripathi (2009), Das *et al* (2009), De (2009), Dey and De (2011), Ghosh (2009), Ghosh *et al* (2010), Kuiri *et al* (2002), Mahanta *et al* (2009), Mitra and Mukherjee (2009, 2012), Pal and Mitra (2007), Palit and Gurung (2008), Pandit and Bhakat (2009), Rahaman and Karmakar (2015), Sharma (2013), Tripathi *et al* (2013), Yonzon *et al*. (2012) and others. In contrary there are a few publications on the ethno-medicinal plants of Koch Bihar district by Bandyopadhyay and Mukherjee (2005, 2006), Bandyopadhyay *et al* (2014) Chowdhury and Das (2007) and Datta *et al* (2014). But no such publications record exclusively the plants used for the treatment of different types of pains. Therefore, the present work was undertaken.

MATERIALS AND METHODS

The present work is the outcome of extensive survey conducted in different villages of the district for the consecutive five years. The formulations were collected from ethnic medicine men and elderly knowledgeable persons of the villages through interview after made rapport with them as they are very much conservative about their practice. The informations were collected following the guidelines of Jain (1965, 1981 & 1995) and Pal & Jain (1999) with some minor changes wherever required. The plants used in the formulations were collected by the author taking help from the ethnic medicine men while visiting around the forest areas or village surroundings. The voucher specimens were processed following Lawrence (1951) and Jain & Rao (1977). Correct identity and updated nomenclature of the voucher specimens were established with the help of published literature and also comparing with the authentic herbarium specimens of Central National Herbarium (CAL).

RESULTS AND DISCUSSION

The formulations collected during the present work are presented below. The doses and the period of medication have also been provided in several occasions. Plants are arranged alphabetically according to their scientific names followed by their names in Bengali or other ethnic languages in parenthesis. The ethnic society from which a particular formulation had been collected is also indicated in abbreviated form. The abbreviation used here are: Khe.-Kheria, Or.-Oraon, Ra.- Rabha, Rj.-Rajbanshi and Sant.-Santal.

Abrus precatorius Linn., (*Kunch*–Beng.; *Kawet*–Sant.).

Family: - Fabaceae

- Leaves and fruits are boiled in mustard oil and the oil is massaged to allay pain of **rheumatism** – Rj.
- Fresh leaf juice (2 –3 teaspoon) is given 15 minutes interval with warm water in **colic** till cured. – Rj.

Aristolochia indica Linn., (*Iswarmul* – Beng.; Ra.).

Family:- Aristolochiaceae

- Two teaspoonful juice of the root is taken thrice a day for three days to cure **body- ache** – Or.

Aphanamixis polystachya (Wall.) Parkar, (*Bijalghanta* – Ra.).

Family:- Meliaceae

- The warm seed oil is massaged to allay **rheumatic pain** – Ra.

Averrhoa carambola Linn., (*Kamranga* – Beng.)

Family: - Avertroaceae

- The paste of bark is applied externally on head to cure '**Adkapale**' (**Hemicrania**) – Rj.

Butea monosperma (Lam.) Taub., (*Palash* – Beng./Sant.)

Family :- Fabaceae

- Fresh juice of leaf (3-4 teaspoon full) is given with water for seven days to cure **abdominal pain** due to worm – Ra.

Caesalpinia cucullata Roxb., (*Bagachra*-Beng)

Family :- Caesalpinaceae

- Root of this plant is mixed with root of 'Lajjabati' (*Mimosa pudica*) and 'Baroi' (*Ziziphus mauritiana*) in equal proportion. These are crushed and the paste is applied externally for a week to allay pain of **sprain** – Rj.

Cissampelos pareira Linn. var. *hirsuta* (Buch.-Ham. ex DC.) Forman., (*Niltat* – Rj; *Tejomala* – Sant.)

Family: - Menispermaceae

- Root is mashed in water and the paste is given (one teaspoon) thrice a day to cure **stomach-ache** – Sant.

Cissus quadrangularis Linn., (*Harjora* – Beng.)

Family: - Vitaceae

- Stem is cut into pieces and boiled in mustard oil till the volume of mustard oil become half of its original volume. Then the oil is filtered and the filtrate is rubbed on the body to ease **body- ache** – Rj.

Cleome rutidosperma DC., (*Navli* – Sant.)

Family :- Cleomaceae

- The paste of the seed is applied on forehead to cure **head-ache** due to cold. – Sant.

Crinum asiaticum Linn., (*Jah-jak* – Sant.; *Sukdarshan* – Beng.; *Dhapdhup*, *Kholai* – Ra.).

Family :- Amaryllidaceae

- The leaves of the plant pounded with Kansisha (*Leucas lavandulifolia*) and boiled in mustard oil. The oil is massaged over the body to relieve **body-ache**.-Ra.
- Fresh leaf juice is poured in the ear to cure **ear-ache**. – Rj.

Croton bonplandianus Baill., (*Nibre* – Rj.)

Family: - Euphorbiaceae

- Juice of leaf is used as eardrop to get relief from **ear-ache** – Rj.

Curcuma caesia Roxb., (*Nilkanta* – Beng.; *Kalahaldi* – Or.).

Family: - Zingiberaceae

- Paste of rhizome (one teaspoonful) is mixed with a cup of luke- warm water and is given 15 minutes interval to allay **abdominal pain** – Or.

Datura metel Linn., (*Dhatura* – Beng.; Or.).

Family:-Solanaceae

- Dried empty shell of fruit is boiled in mustard oil and the warm oil is massaged over the body to cure **body-ache** along with cough and cold – Or.

Datura stramonium Linn., (*Kaladhatura* – Beng.).

Family :- Solanaceae

- Paste of the root is mixed with equal volume of turmeric powder (*Curcuma longa*), slightly warmed and is applied externally to allay **rheumatic pain**.-Rj

Desmodium gangeticum (Linn.) DC., (*Shalpani* – Beng.).

Family :- Fabaceae

- Decoction of leaf (½ cup) is given thrice daily in **body-ache** associated with catarrhal fever – Rj.

Drymaria diandra Blume, (*Abhijal* – Ra.; *Atiphal* – Rj.; *Jabsiri* – Ra.; *Gibini* – Ra.)

Family: - Caryophyllaceae

- The paste of plant is applied externally to cure **head-ache** – Rj.

Eclipta prostrata (Linn.) Linn., (*Keshoot* – Beng.; *Kala Kesuri*, *Kekuria* – Rj., Ra.).

Family: - Asteraceae

- The juice of the plant mixed with lime water and the mixture (1/2 cup) is given thrice a day in **abdominal pain**-Ra.

Ficus benghalensis Linn., (*Bot* – Beng.)

Family :- Moraceae

- Paste of the bark is slightly warmed and applied externally to allay pain of **sprain**. – Rj.

Hedychium coronarium Koen., (*Dulichampa* – Beng.)

Family:- Zingiberaceae

- Paste of rhizome is applied externally to allay pain of **rheumatism** – Rj.

Justicia gendarussa Burm. f., (*Jatrasisir/Jatrashipad* – Ra./ Kh.).

Family :- Acanthaceae

- The aerial parts of the plant are crushed and boiled with mustard oil. The oil is massaged daily over the affected parts to allay pain of **gout** – Rj.

Kalanchoe pinnata (Lam.) Pers., (*Sadaimastak, Patharkuchi* – Rj.).

Family :- Crassulaceae

- The paste of leaf is applied on head to cool the brain and also to cure **head-ache** – Rj.

Kyllinga brevifolia Rottb., (*Biskala* – Ra.).

Family :- Cyperaceae

- Paste of the plant is applied externally in **head-ache** – Ra.

Lannea coromandelica (Houtt.) A. Richard, (*Jiyal* - Beng.; *Dhoka* – Sant.)

Family :- Anacardiaceae

- Warm decoction of the bark is given to gargle to cure **tooth-ache** – Or.

Lepidagathis incurva Buch.-Ham. ex D. Don, (*Chare momorkha* - Ra.)

Family :- Acanthaceae

- The juice of leaf is used as an eardrop to cure **ear-ache** and **inhibit pus formation** – Ra.

Leucas lavandulifolia Smith (*Dandakalas* – Beng.; *Kansisa / Goma* – Ra.).

Family :- Lamiaceae

- The slight warm juice of the leaves (2-3 drops) is poured on the ear hole to cure **ear-ache**.
Dry fomentation is recommended for early recovery – Ra.

Mikania micrantha Kunth, (*Japanilata* – Beng.)

Family :- Asteraceae

- The leaf is pounded along with 'Halud' (rhizome of *Curcuma longa*) and is applied externally on affected area of the body to allay pain of **sprain**- Rj.

Mimosa pudica Linn., (*Lajja-bati* – Beng.; *Lajnu* - Sant.).

Family :- Mimosaceae

- Plants with flowers and fruits are pounded and boiled in mustard oil for fifteen minutes. This oil is massaged to cure **body- ache**. –Rj.

Mimusops elengi Linn., (*Bakul* – Beng.; *Bohur*- Sant.)

Family :- Sapotaceae

- Decoction of bark is given to gargle against **tooth-ache** – Sant.

Moringa oleifera Lam., (*Sajna* – Beng.; *Munga* – Sant.).

Family :- Moringaceae

- Stem bark (about 20 gm) is mixed with a small piece of 'Ada' (rhizome of *Zingiber officinale*) and made into paste. The paste is mixed with fresh cow dung and slightly warmed. The mixture is applied externally over the affected parts for the treatment of **gout** – Rj.

Murraya koenigii Spreng., (*Narshim* – Khe., Rj.)

Family :- Rutaceae

- Fresh leaf juice (2 teaspoon full) is given twice a day for the treatment of **rheumatism** – Ra.

Murdannia nudiflora (Linn.) Brenan . (*Chikini* – Ra.).

Family :- Commelinaceae

- To allay the inflammation and pain of **sprain** slightly warm paste of plant is applied externally and bandaged tightly by a piece of cloth–Ra.

Ocimum gratissimum Linn., (*Ram-tulsi* – Beng.)

Family :- Lamiaceae

- Paste of leaf is applied on forehead to get relief from **head-ache**-Khe

Pedilanthus tithymaloides (Linn.) Poit., (*Chita* – Ra., Or.).

Family :- Euphorbiaceae

- Three mature leaves are steeped in water for some time. Then the leaves are crushed and the aqueous extract is given with a bit of salt to abate **abdominal pain** – Ra.
- Poultice is given by the leaf paste of the plant in **sprain**.- Or.

Piper longum Linn., (*Peepal / Pipal* – Beng.; *Hapani Pan* - Rj.)

Family :- Piperaceae

- The plant mixed with ‘Narshim pata’ (leaves of *Murraya koenigii*), ‘Neem pata’ (Leaves of *Azadirachta indica*), ‘Rasun’ (bulb of *Allium sativa*) and ‘Piyaj’ (*Allium cepa*) in equal proportion. These are pounded and boiled in mustard oil. The oil is filtered and massaged over the affected part of the body in **rheumatism**. – Rj.

Polyalthia suberosa (Roxb.) Thwaites, (*Sandiome* – Sant.)

Family :- Annonaceae

- The paste of the leaf is applied externally to cure **head-ache** – Sant

Rauvolfia serpentina (Linn.) Benth. ex Kurz, (*Chando* – Ra., Khe., Or., Rj.)

Family :- Apocynaceae

- The powder of root (1 teaspoon) is given with luke-warm water for the treatment of **colic**. It is recommended to continue the medicine half an hour interval till the problem persists. – Or.

Solanum anguivi Lam., (*Ragani* – Khe.).

Family :- Solanaceae

- The paste of leaf is applied externally in ‘**Adkapale**’ (**haemicrania**) – Khe.

Tinospora cordifolia (Willd.) Miers, (*Gulanha* – Beng.; *Gurach* – Or.)

Family :- Menispermaceae

- Powder of root (½ teaspoon) is given with water to cure **stomach-ache**. It may be given in half an hour interval till cured. – Or.

Typhonium trilobatum (Linn.) Schott., (*Ghetkul* – Beng.; *Chamghas* – Or.)

Family :- Araceae

- The warm paste of root is applied externally on joints for the treatment of ‘**vata**’ (**rheumatism**) – Or.

Vitex negundo Linn., (*Nishindha*–Beng. ; *Postia*-Ra.)

Family :- Verbenaceae

- The leaves (25 gm) are mixed with a piece of ‘Ada’ (rhizome of *Zingiber officinale*) and boiled in water until the water become half and filtered. The warm filtrate is taken like tea twice daily to ally **rheumatic pain**. It is continued for one month. – Rj.
- Juice of the leaf (4 teaspoon) is given in **colic**. It should be given 15 minutes interval till cured- Sant.
- The luke- warm infusion of the leaf (1/2 cup) is given thrice daily in **body-ache** till cured- Ra.

The present study recorded 47 species belonging to 43 genera under 32 families which are used for the preparation of formulations given to cure pain of different types. Among the recorded plants Dicotyledons are represented by 37 species belonging to 35 genera under 27 families and Monocotyledons by 10 species belonging to 08 genera under 05 families (Table-1, Fig.-1). Naturally, herbaceous plants (25 sp) are dominant over the trees, shrubs and climbers which are represented by 11, 5 and 6 species respectively. During the study a total of 45 formulations have been collected from 5 ethnic communities viz Kheria, Oraon, Rabha, Rajbanshi and Santal recommended for the treatment of 7 categories of pain (Table-2). Among the ethnic communities 19 formulations have been procured from Rajbanshi community, 11 from Rabha, 8 from Oraon, 5 from Santal and 2 from Kheria.

Table 1: Conspectus of taxa used for the preparation of medicine.

Taxa	Dicotyledons	Monocotyledons	Total
Families	27	05	32
Genera	35	08	43
Species	37	10	47

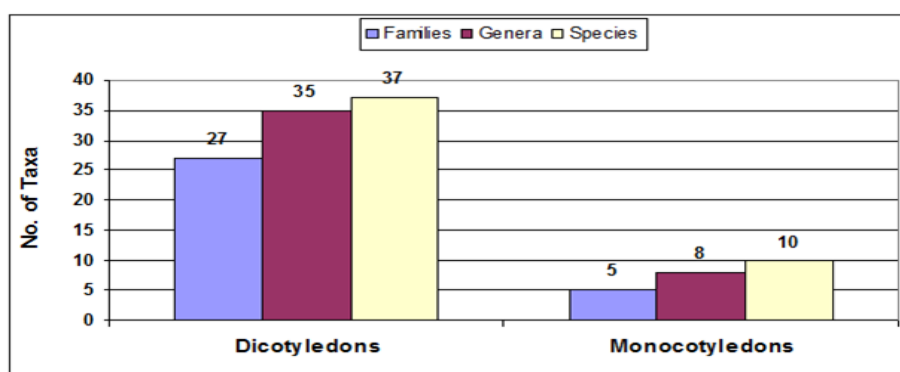


Fig. 1: Comparative account regarding number of taxa used for preparation of formulations.

Table 2: Number of formulations recommended for different pain.

Pain types	No of Species Used	No. of Formulations
Body-ache	06	06
Ear-ache	04	04
Head-ache	08	08
Rheumatism & Gout	16	11
Sprain	07	05
Stomach-ache	10	09
Tooth-ache	02	02

Table 3: Number of plant parts used for the treatment of different pain.

Plant Parts	Body-ache	Ear-ache	Head-ache	Rheumatism & Gout	Sprain	Stomach-ache	Tooth-ache	Total
Whole Plant	01	-	02	01	01	01	-	06
Root/Rhizome/ Bulb	01	-	-	07	03	04	-	15
Stem&Stem bark	01	-	01	02	01	-	02	07
Leaf	02	04	04	05	02	04	-	21
Fruit	01	-	-	01	-	-	-	02
Seed	-	-	01	01	-	-	-	02

Table 4: Numerical analysis regarding type of preparation of formulation.

Type of preparation	No. of formulations	Percentage
Decoction	04	8.90
Infusion	01	2.22
Juice	11	24.44
Oil	08	17.78
Paste	19	42.22
Powder	02	4.44

It has been observed that rheumatic pain and gout are fairly common among the aged members. Similarly stomach-ache is also a prevalent health problem among the ethnic and rural peoples due to ignorance of personal hygiene and much consumption of leafy vegetables. A total of 11 formulations have been recorded for the treatment of rheumatism and gout followed by stomach-ache (9 formulations). Among 45 formulations, 38 formulations are recommended in the form of single drug preparation (mono-herbal) and in 7 formulations multiple herb preparation (poly-herbal) are considered. It has been found that 14 formulations have been suggested for oral administration and the rest 31 are externally used to allay pain of different body parts. The table 3 indicates that for the preparation of drugs leaves are used in maximum cases (21nos.) followed by root, rhizome and bulb (15 nos.). Interestingly, the drugs are given in different forms like decoction, juice, infusion, oil, paste and powder (Table-4). But in 19 formulations paste of the different plant parts have been suggested followed by juice in 11 formulations.

CONCLUSION

The present study reveals that a majority of ethnic and rural peoples of the district of Koch Bihar are dependent on herbal drugs and the ethnic medicine-men have a very rich herbal heritage for the treatment of different ailments including pain. The ingredients of the formulations they use to collect from the forests and village surroundings. Interestingly, a number of weeds, some of them are exotic in origin like *Cleome rutidosperma* DC., *Croton bonplandianus* Baill., *Drymaria diandra* Blume *Eclipta prostrata* (Linn.) Linn., *Mikania micrantha* Kunth etc. are the ingredients of the formulations. It is also noticed that for the preparation of formulations, overexploitation of some plants like *Abrus precatorius* Linn, *Aristolochia indica* Linn, *Cissampelos pareira* Linn. var. *hirsuta* (Buch.-Ham. ex DC.) Forman, *Curcuma caesia* Roxb, *Rauwolfia serpentina* (Linn.) Benth. ex Kurz causes serious damage to the population of these plants. These plants may disappear from the district in near future if we do not pay much attention about their conservation. Therefore, measures should be taken to protect these plants for the sake of conservation of biodiversity as well as to maintain the ethnic culture of the district.

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