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Medicinal plants used for the treatment of bone fracture: An Ethnobotanical survey from Purba and Paschim Medinipur districts of West Bengal, India

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Abstract

Recent survey reports the 20 species (dicots 17 & monocots 3) of medicinal plants under 20 genera (dicots 17 & monocots 3) and 15 families (dicots 12 & monocots 3) collected from Purba and Paschim Medinipur districts for the treatments of bone fractures. The common Bengali name (s), habit, parts used and their mode of application are also discussed in this paper.

Keywords: Medicinal plants, Purba & Paschim Medinipur, Bone fracture

Introduction

The Study Area

The undivided Midnapore district is one of the largest districts of West Bengal. In the year 2002, this district divided into two sister districts i.e. Purba and Paschim Medinipur districts. From physiographic point of view both districts are varies in soil formation, climatic set up etc. In Paschim Medinipur basically the soil is lateritic in nature whereas in Purba Medinipur the soil is of alluvial type.

Materials and Methods

For the documentation of bone fracture repairing medicinal plants, a number of field surveys of different seasons were carried out different parts in Purba and Paschim Medinipur districts during the year 2017 to 2018. For the preparation of herbarium, standard methods of Jain and Rao^[1] were followed. The voucher specimens were deposited at the Herbarium of Ramnagar College.

Literature Review

Due to variations of physiography, soil formation, climatic set up there grows a good number of plants. Previously a number of botanists, researchers have done their work only from taxonomical and ecological point of view^[2-5]. Besides, a group of investigators did their works from medicinal uses of the plants from these regions^[6-11]. But particular works for particular diseases/ ailments were not yet done before from these regions.

The authors are also consulted a number of literatures, treatises of eminent researchers, herbalists^[12-15] for the completion of this paper.

At present human beings are very much susceptible to various types of ailments/ diseases or problems in their day life. Though the modern medicine raises a very momentum, these are not actually sending this resonance those who are inhabited in the fringe regions from the highly so called advanced places. So, until now remote villagers are fully depended upon the naturally occurring plants and their medicinal uses (about 80%) for the correction of their daily life ailments or problems. Because the side effect of conventional medicine is much less than the modern medicine and these naturally occurring plants are easily available at around their habitats so they can utilise them easily.

Present survey is concerned with the listing up of medicinal plants for the treatments of bone fracture of human being inhabited in Purba and Paschim Medinipur districts.

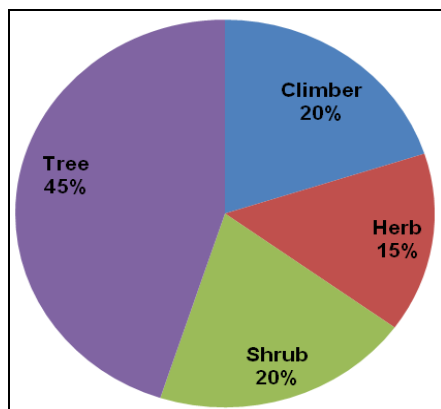
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Fig 1: List of plants from Purba and Paschim Medinipur districts are used for the treatments of bone fracture purposes

Name of the plants	Family	Common Bengali name (s)	Habit	Parts used	Mode of uses
<i>Abrus precatorius</i> L.	Leguminosae	Kunch phal (Red)	Climber	Leaves	Make leaf paste with lime water and then used for relief from swelling
<i>Alangium salvifolium</i> (L.f.) Wang	Alangiaceae	Anisa	Tree	Leaves	Leaf paste is useful for repairing bone fracture
<i>Carica papaya</i> L.	Caricaceae	Pepe	Tree	Fruits	Fruit paste can be used externally
<i>Cassia fistula</i> L.	Leguminosae	Bandar-lathi	Tree	Stem bark	For speedy recovery from bone fracture, generally stem paste is used
<i>Cissus quadrangularis</i> L.	Vitaceae	Harbhanga, Harjora	Climber	Stems	For immediate relief extraction of stems can be used to repair bone fracture
<i>Clerodendrum viscosum</i> Vent.	Verbenaceae	Ghetu	Shrub	Roots	Extraction of root can be used for speedy relief from bone pain /swelling
<i>Curcuma longa</i> L.	Zingiberaceae	Haldi	Herb	Roots	Root powder mixed with cow ghee is useful for treating the bone fracture
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Durba	Herb	Whole plant	Plant decoction can be used externally for speedy recovery
<i>Ficus benghalensis</i> L.	Moraceae	Bot	Tree	Leaves	Leaf paste is useful for bone fracture repair
<i>Gmelina arborea</i> Roxb.	Verbenaceae	Gamar	Tree	Leaves	Leaf extract is used for the bone setting
<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Verenda	Shrub	Roots	Root extract can be given orally for the treatment of bone fracture
<i>Moringa oleifera</i> Lam.	Moringaceae	Sajina	Tree	Stem bark	Stem bark paste can be used externally
<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Seuli- Bengali	Tree	Roots	Paste can be prepared with the fresh water, and this can be used for bone treatment
<i>Ocimum basilicum</i> L.	Lamiaceae	Babui tulsi	Herbs	Stem bark	Stem bark paste is used for the repairment of bone fracture
<i>Pothos scandens</i> L.	Araceae	Bendarli	Climber	Whole plant	Make a paste with fresh water and then used at the fracture part for relief
<i>Ricinus communis</i> L.	Euphorbiaceae	Reri	Shrub	Leaves	Make a paste and apply it as pain reliever
<i>Sena tora</i> (L.) Roxb.	Leguminosae	Chakunda	Shrub	Leaves	Leaf paste is useful for bone fracture
<i>Tamarindus indica</i> L.	Leguminosae	Tentul	Tree	Leaves	Leaf paste generally is used to treat bone fracture
<i>Terminalia arjuna</i> (Roxb.) Wt. & Arn.	Combretaceae	Arjun	Tree	Stem bark	For the preparation of paste, firstly stem bark mixed with garlic and then this paste can be used for the repairment of bone fracture.
<i>Tinospora cordifolia</i> (Willd.) Miers. ex Hook.f. & Thoms.	Menispermaceae	Gulanca	Climber	Stems	Paste of stem is used as bandage for the healing of bone fracture

**Fig 1:** Plant habits for the treatment of bone fractures

Results and Discussions

Recent survey reports the 20 species (dicots 17 & monocots 3) of medicinal plants from different parts of Purba and Paschim Medinipur districts under 20 genera (dicots 17 & monocots 3) and 15 families (dicots 12 & monocots 3). Out of 20 species, 9 species are trees (e.g. *Alangium salvifolium* (L.f.) Wang, *Carica papaya* L., *Cassia fistula* L., *Ficus benghalensis* L., *Gmelina arborea* Roxb., *Moringa oleifera* Lam., *Nyctanthes arbor-tristis* L., *Tamarindus indica* L. and *Terminalia arjuna* (Roxb.) Wt. & Arn.); 4 species are shrubs (e.g. *Clerodendrum viscosum* Vent., *Jatropha gossypifolia* L., *Ricinus communis* L. and *Sena tora* (L.) Roxb.); 4 species are

climbers (e.g. *Abrus precatorius* L. (twiner), *Cissus quadrangularis* L. (tendrill climber), *Pothos scandens* L. (root climber) and *Tinospora cordifolia* (Willd.) Miers. ex Hook.f. & Thoms. (twiner)) and 3 species are herbs (e.g. *Curcuma longa* L., *Cynodon dactylon* (L.) Pers. and *Ocimum basilicum* L.).

Regarding the preparations of the medicines generally plant parts like leaves, stems, stem barks, roots and whole plants are considered here. Out of 20 species, only 7 species of leaves; 4 species of stem barks; 4 species of roots; 2 species stems, 2 species of whole plants and 1 species of fruit are considered.

Conclusion

Due to rapid urbanisation, industrialisation, indiscriminate felling of trees, ecological fragmentation, grazing, anthropogenic activities in consonance with the climate change and pollution, the gradual extermination of the novel ecological species from their natural habitats resulting the havoc biodiversity loss. So it is need of the hour for the conservation of the natural biota (especially those species are medicinally potent from these regions) attention must be employed for the interests of sustainable development and future generation afterwards.

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