Ethnomedicinal plants used for the treatment of cuts and wounds by Kuruma tribes, Wayanadu districts of Kerala, India

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ABSTRACT

Objective: To study the ethnomedicinal uses by the Kuruma tribes for discovering new drugs to cure cuts and wounds so as to provide the data scientifically evaluated.

Methods: A survey was conducted during May 2008–September 2009 to collect information on medicinal plants used by the Kuruma tribes and queries were made on the various species of plants used regularly and occasionally to cure cuts and wounds.

Results: The present study includes information on 34 plant species belonging to 32 genera and 25 families used by Kuruma tribe of Wayanad district of Kerala for the treatment of cuts and wounds.

Conclusions: The present study of the knowledge on the folklore uses of the medicinal plants used by Kuruma tribes leads to effective utilization of herbal medicines in the future.

KEYWORDS
Ethnomedicine, Kuruma tribe, Cuts, Wounds, Wayanad, Kerala

1. Introduction

India has a rich tradition of plant–based knowledge on health care. A large number of plants, plant extracts, decoctions or pastes are equally used by tribals and folklore traditions in India for treatment of cuts and wounds[1]. Many tribal groups have been using several plant or animal products for medicinal preparations and these medicines are known as ethnomedicines[2]. Ethnomedicine may be defined broadly as the use of plants by humans as medicines, but these uses could be called, more accurately, as ethnobotanic medicine[3]. It is estimated that around 200,000 plant species are known all over the world. The World Health Organization has listed 21,000 plant species possessing medicinal properties in the world. In India about 2,500 plant species are used for medicinal purposes by traditional healers[4]. The uses of different parts of plants by the local people of the plains or hilly areas in different aspects have been studied by several workers[5].

Our country has a vast emporium of ethnomedicinal and folklore wealth. The indigenous groups possess their own distinct culture, religious rites, food habit and a rich knowledge of traditional medicine[6]. Indigenous knowledge on natural resources utilization of medicinal plants not exceeding the resilience of the surrounding...
environment is regarded as an important measure of sustainable plant biodiversity conservation[7]. Medicinal plants have considerable global impact in recent years. Due to various human activities such as deforestation, rapid industrialization, urbanization and other developmental activities causing fast declining of both natural vegetation and traditional culture in India[8].

Kurumans are the dominant scheduled tribe community in Wayanad district. The principal occupation of the Kurumans was wood cutting and collection of minor forest products[9]. They live in huts with high foundations, mud walls, bamboo doors and strong roof thatched with grass and straw. They are mostly agricultural labours and some are cultivators. Common health problem faced by them are malnutrition, worm infections, skin diseases, diarrhoea, jaundice and fever[10]. Based on the information available, an effort has been made to study the ethno botanically important plants used by the Kuruma tribals of Wayanad district particularly to cure cuts and wounds.

2. Materials and methods

Wayanad district is situated in the Western Ghats region of Kerala with an altitude varying from 700 to 2100 m sea level. Nilgiri and Mysore district of Tamil Nadu and Karnataka respectively bound it on the East, Coorg district of Karnataka on the North, Malappuram district of Kerala on the South and Kozhikode and Kannore district of Kerala on the West. Wayanad lies between 11°27’N and 15°58’N, and 75°47’E and 70°27’E.

Several field visits were conducted during May 2008–September 2009 to collect information on medicinal plants used by Kuruma tribes for curing cuts and wounds in their daily life activities. A survey was conducted among the Kuruma tribes, 25 were selected at random and interviewed. Queries were made on the various species of plants used regularly and occasionally to cure cuts and wounds. After collecting required data, the correct nomenclature was identified with the help of available literatures like Flora of Presidency of Madras[11], Flora of British India[12] and cross checked with the herbarium specimens deposited in the Herbarium of Bharathiar University, Coimbatore, Tamil Nadu.

3. Results

The present study includes information on 34 plant species belonging to 32 genera and 25 families used by Kuruma tribe of Wayanad district of Kerala for the treatment of cuts and wounds (Table 1). Most of the plant species grow naturally in different areas and their properties are important in traditional herbal medicine.

<table>
<thead>
<tr>
<th>Botanical Name (Vernacular Name)</th>
<th>Family</th>
<th>Parts used</th>
<th>Mode of administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agave cantula Roxb. (Kattahaalla)</td>
<td>Agavaceae</td>
<td>Roots</td>
<td>Root extract is applied on wounds</td>
</tr>
<tr>
<td>Aloe vera L. (Chinkhathalla)</td>
<td>Liliaceae</td>
<td>Leaves</td>
<td>Fresh leaf paste is applied twice a day on wounds until cure</td>
</tr>
<tr>
<td>Argemone mexicana L. (Piramathandu)</td>
<td>Papaveraceae</td>
<td>Leaves</td>
<td>Leaf paste is applied on boils and wounds twice a day until cure</td>
</tr>
<tr>
<td>Artocarpus heterophyllus Lam. (Flavu)</td>
<td>Moraceae</td>
<td>Latex</td>
<td>Extract of white latex is applied on wounds</td>
</tr>
<tr>
<td>Azadirachta indica A. Juss. (Vaeppu maram)</td>
<td>Meliaceae</td>
<td>Leaves</td>
<td>Leaves of Azadirachta indica along with leaf paste of bitter-gourd is applied on wounds</td>
</tr>
<tr>
<td>Celia pentandra (L) Gaertn. (Panjimaram)</td>
<td>Bombacaceae</td>
<td>Roots</td>
<td>Root bark paste is applied on burns and wounds</td>
</tr>
<tr>
<td>Chromolaena odoratum (L.) King and Robinson (Kuppa pacha)</td>
<td>Acanthaceae</td>
<td>Leaves</td>
<td>Leaf juice and paste is applied in fresh cuts and wounds to stop bleeding and to relieve pain</td>
</tr>
<tr>
<td>Cissampelos pareira L. (Ponnmuttai)</td>
<td>Menispermaceae</td>
<td>Roots</td>
<td>Root extract is applied to wound till the wound is healed</td>
</tr>
<tr>
<td>Cleome viscosa L. (Ellukusakkathali)</td>
<td>Cleomaceae</td>
<td>Leaves</td>
<td>Leaf paste is applied on wounds twice a day for three days</td>
</tr>
<tr>
<td>Commiphora caudata (Wight &amp; Arn., Engl. (Kiluvai)</td>
<td>Burseraceae</td>
<td>Leaves</td>
<td>Leaf juice is applied on wounds</td>
</tr>
<tr>
<td>Cyanodon dactylon L. (Arumampullu)</td>
<td>Poaceae</td>
<td>Whole Plant</td>
<td>Fresh plant paste is applied on bleeding wounds twice a day</td>
</tr>
<tr>
<td>Euphorbia hirta L. (Amampatchaiarisi)</td>
<td>Euphorbiaceae</td>
<td>Leaves</td>
<td>Leaf paste is applied on cuts and wounds</td>
</tr>
<tr>
<td>Hemidesmus indicus (L.) R.Br. (Nannari)</td>
<td>Aselepiadaceae</td>
<td>Roots</td>
<td>Root paste is applied on wounds</td>
</tr>
<tr>
<td>Hemicathara colorata Blume. (Munkootti)</td>
<td>Acanthaceae</td>
<td>Whole Plant</td>
<td>The whole plant paste is applied on cuts and wounds</td>
</tr>
<tr>
<td>Ichnocaupus frutescens (L.) R.Br. (Paravalli)</td>
<td>Apocynaceae</td>
<td>Leaves</td>
<td>Leaf paste is applied on cuts to stop bleeding</td>
</tr>
<tr>
<td>Leonitis nepatifolia (L.) R. Br. (Ranaberyri)</td>
<td>Lamiaceae</td>
<td>Inflorescence</td>
<td>Crushed inflorescence mixed with ground nut oil is applied on wounds</td>
</tr>
</tbody>
</table>
Therefore some plants are commonly cultivated for its use. The most common forms of preparing the crude drugs from plants are fresh juice, powder, paste and decoction. These traditional method of treatment based on medicinal plants are still an important part of their life. Among the different parts used by the Kuruma tribe, leaves constituted the major portion in medicine. In most of the cases, the formulation of medicine preparation is based on single drugs. The survey indicated that the study area was rich in medicinal plants useful to treat a wide spectrum of human ailments. The study also revealed that the tribal people of the area possess good knowledge of crude herbal drugs. Such studies may produce valuable information for phytochemists and pharmacologists to develop new drugs for various human ailments. The present study observes that the younger generation takes no interest for preserving the traditional skills and technology. This situation highlights the need for complete recording of their empirical knowledge for the benefit of the future generations.

A good number of plants in the present investigations were reported by many earlier investigators. The wound healing property of Tridax procumbens L. was confirmed through pharmacological studies by Mundada et al[13]. Mimosa pudica L. is a very good medicinal plant for wound healing and it was confirmed in albino wistar rats[14]. The wound healing activity of Viscum articulatum Burm. f. was proved through phytochemical screening by Najafi et al[15]. The wound healing activity of Hemigraphis colorata Blume, was also proved through bioprospecting methods by Subramoniam et al[16]. The plants like Leonotis nepatifolia (L.) R. Br., Melastoma malabathricum L., Cleome viscosa L., Euphorbia hirta L., Tagetes erecta L., Oxalis corniculata L. and Ziziphus enoplia Mill. were used among the various tribal communities of Southern India for wound healing purposes[17].

4. Discussion

The knowledge on the folklore uses of the medicinal plants leads to open up ways for effective utilization of herbal medicines in future. Future work in this direction may help to discover new drugs to cure cuts and wounds. Authors also hope that, this study may stimulate researches to take up similar investigations in other tribal areas of Kerala.

Conflict of interest statement

We declare that we have no conflict of interest.

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Comments

Background

The present study on medicinal plants used by Kuruma tribes especially for cuts and wounds is very useful for the young researchers those who are working in the field of pharmacology. This type of studies gives clues to pharmacologists for developing drugs for various ailments.

Research frontiers

In this paper the method of preparation of crude drugs and their application along with the botanical and vernacular names of the plant are given. It would be very useful for the preparation of crude drugs for cuts and wounds.

Related reports

A good number of plants in the present investigations were reported by many earlier investigators (Mundada et al., 2010; Najafi et al., 2010; Venkateswarlu et al., 2001 and Subramoniam et al., 2001).

Innovations and breakthroughs

The present study includes information on 34 plant species belonging to 32 genera and 25 families used by Kuruma tribe of Wayanad district of Kerala for the treatment of cuts and wounds. The Wayanad is rich with various medicinal plants. Among these the study on potential plants especially for the treatment of cuts and wounds is very appreciable.

Applications

This type of studies may produce valuable information for phytochemists and pharmacologists to develop new drugs for various human ailments. In addition, the ethno botanical data on crude drug preparation for the treatment of cuts and wounds is very applicable for both tribals and local people.

Peer review

The method of present study is a very effective way to collect diminishing traditional knowledge from aboriginal communities. In this regard publication of such valuable traditional knowledge is very appreciable.

References