International Journal of Phytomedicine 5 (2013) 14-17
http://www.arjournals.org/index.php/ijpm/index

Original Research Article

ISSN: 0975-0185

The use of Medicinal Plants for the treatment of Gonorrhoea and Syphilis in South West Bengal of India

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Abstract

Gonorrhoea and Syphilis as Sexually Transmitted Infections occur throughout the world. In India the prevalence of these diseases are in alarming situation due to the rapid spread of the diseases, high cost of treatment and the increased risk of transmission. Current therapies available for symptomatic treatment are quite expensive beyond the reach of common people and associated with the emergence of drug resistance. Many patients seeking help from the alternative systems of medicines for treatment. In our country several crude plants are used as medicine since Vedic period. Herbal medicines provide rational means for the treatment of many Sexually Transmitted Infections. The herbal medicines have many advantages: have no side effects, better patient tolerance and relatively less expensive. Locally available herbal practitioners or healers have practiced since past in this direction. Furthermore the acceptability of herbal medicines are greater to control these infections due to the social stigma associated with them and in case of women it is much more acceptable to discuss their problem with the traditional healers or herbal medical practitioners. In the present study thirty seven medicinal plants have been recorded for the treatment of Gonorrhoea and Syphilis and documented from South West Bengal of India.

Keywords: Ethnobotany; Gonorrhoea; Syphilis; Women's Health Care; Herbal Practitioners; South West Bengal.

Introduction

Medicinal plants are used to cure specific ailments by the people throughout the globe from the ancient times. It is fact that the village people are generally rely on the medicine originated from the plants directly or indirectly. Again the tribal people who reside in a very remote rural areas are fully dependent upon the herbals. Local herbal practitioners or healers practicing the use of medicinal plants for the common people in a very low expense. This plant based traditional medical system continue to provide the primary health care to more than three-quarters of the world's population. The WHO has estimated eighty per cent of the global population rely chiefly on traditional medicine [1]. With the advent of human civilization, many systems of therapy (Ayurveda, Siddha, Unani etc) have been developed primarily based on plants.

Sexually transmitted infections (STIs) are a major public health problem and are one of the most common causes of illness and even death in the world today. They have far reaching health, social and economic consequences, particularly in the developing countries like India.

Like others so many common diseases the STIs like gonorrhea and syphilis in the villages among women are very common in our country.

Gonorrhea is caused by bacteria *Neisseria gonorrhoeae* and syphilis is caused by bacteria *Treponema pallidum.* The primary route of transmission of STIs is through sexual contact and mainly caused by bacteria, viruses or protozoa. In the developed world, viral STIs have become increasingly common and important, where as in developing countries bacterial STIs are more common [2]. In the poor countries the management of STI cases is usually inadequate [3-5] and STIs control programmes often failed mainly due to a failure to recognize the magnitude of the problem in the population, failure to associate the diseases with serious complications and sequelae, providing inadequate coverage of care and failure to identify asymptomatic individuals until

complications developed [6]. The three most common presenting symptoms of an STIs are urethral discharge, genital ulceration and vaginal discharge with or without vulval irritation [2].

The size of the global burden of STIs is uncertain because of the lack of effective control and notification systems in many countries. The WHO has estimated a total of 340 million new cases of curable STIs in adults per annum mainly in South and South East Asia [2]. During the last ten years gonorrhea and syphilis have been increased over 100% [2]. The syphilis is still a major clinical problem and a cause of genital ulceration in the developing world. STIs have a much higher incidence and prevalence in India [2]. An intensive village level investigation on 650 women in Maharashtra suggested that a large proportion of women were suffering from syphilis (10.5 per cent) and gonorrhea (0.3 percent) [7].

In normal healthy women, vaginal cavity is inhabited by a number of microorganisms, existing in a dynamic microenvironment. These are mainly hydrogen peroxide–producing lactobacilli, which inhibit other endogenous bacteria by producing bacteriocins, as well as hydrogen peroxide and lactic acid, all of which lower the vaginal pH to a level that is inhospitable to many other bacteria. Any disturbance to this ecosystem leads to a number of infectious conditions and diseases [8]. Both ulcerative and non-ulcerative STIs increase the risk of transmission of other STIs, including AIDS because of changes in the normal vaginal epithelium [9].

In our country the crude plants used as medicine since Vedic period. Herbal medicines provide rational means for the treatment of many diseases that are obstinate and incurable in other systems of medicine. These gaining popularity because of advantages in fewer side effects, better patient tolerance, relatively less expensive and acceptance and long history of use [8]. The acceptability of herbal medicine is greater because of the social stigma associated with STIs patients. People, particularly women, either do not discuss their ailments or only discuss them preferentially with traditional healers, who are common in every villages and cities. Since these healers most often belong to their own community, people seek their treatment instead of visiting modern allopathic doctors.

Although the people of South West Bengal traditionally used so many herbal plants for preparing drugs and medicines to treat gonorrhea and syphilis, yet no such documentation has been done earlier. The present study was initiated with an aim to identify medicinal plants resources and the parts used to treat gonorrhea and syphilis.

Materials and Methods

In order to document the utilization of indigenous medicinal plants, survey was carried out during the last three years (2008 – 2011) in different villages and forest areas of South West Bengal of India. The survey was carried out throughout the year so as to get maximum information. Repeated enquiries were made to understand their knowledge, methods of diagnosis and treatment of diseases. Data were collected on the specific parts of the plants used, collection, method of uses of the drugs, dosage administration and the purpose for which is used. The information on medicinal uses of the indigenous plants have been described after gathering information from general local people, experienced aged rural folk, traditional herbal medicine practitioners and local herbal drug sellers. The medicinal plants specimens were collected, identified with the help of authentic specimens, books, journals, floras and revisions [10-19] and documented in the herbarium of Dept. of Botany, Raja. N.L. Khan Women's College. For up-to-date author citation [20], was followed.

Observation

The 37 medicinal plants (listed in the table 1) and their parts used for the diseases are given below.

Discussion

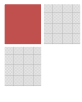
The different districts of South West Bengal are the richest source herbal medicinal plants. The common people of these districts using the plants from generation after generation. The methods used for curing diseases have been found to be different from one community to other. This is because of their socio-economic structure, ancient traditional knowledge and beliefs. Their livelihood is totally dependent on ecological surroundings and they use simple technology to sustain their life, which seems totally conservative. The young generation ignoring the traditional practice day by day. The present study emphasized that there is a profound and growing knowledge gap between old and younger generations. People of more than 50 years age know a lot about wild plant products as compared to younger generation [21]. Different plant parts like roots, stem, leaves, fruits, flowers and seeds are used by the people to control the gonorrhoea and syphilis. The traditional healers or herbal medical practitioners cultivating these plants very carefully in their gardens for these purposes. Due to the social stigma women are not mentally free to talk about their STIs to the doctors or not openly discuss with the fellow neighbours. They disclose only to the local practitioners. Now it is the right time to take the necessary steps to restore the eco-friendly traditional knowledge of them for future generation.

The medicinal plants provide numerous opportunities to the state to advance rural well being. Cultivation and processing of plants often is environment friendly unlike the pollution by chemical industry. Medicinal plants are one of the few natural products that sell at premium prices and can also be a source of income for poor families. Thus, the global clamor for more herbal ingredients creates possibilities for the commercial cultivation of medicinal plants. Due to all these advantages, plants continue to be a major source of new lead compounds to control gonorrhea and syphilis.

In the present study thirty seven medicinal plants have been investigated mainly on morphological basis but no attention has been paid on chemical analysis. The bioactive ingredients for antimicrobial and anti-inflammatory activities of the investigated plants have little information. Al-Fatimi et al. [22] reported anti-bacterial activities of *Tamarindus indica* and Rimbau et al. [23] also reported its anti-inflammatory properties.

Table 1. List of Medicinal plants used against gonorrhea and syphilis

Sl.No.	Scientific name	Family	Vernacular name	Part(s) used	Ailment
1	*Abrus pracatorious* L.	Fabaceae	Kaincha	Whole plant	Gonorrhoea
2	*Abrus pulchellus* Wall.ex Thwaites.	Fabaceae	Kunch	Root	Gonorrhoea
3	*Abutilon indicum* L.	Malvacae	Patari	Leaves, Seeds	Syphilis
4	*Acacia catechu* (L.f.) Willd.	Fabaceae	Khair	Whole plant	Gonorrhea
5	*Achyranthes aspera* L.	Amaranthaceae	Apang	Roots	Gonorrhoea
6	*Aloe vera* (L.) Burm.f.	Liliaceae	Ghritakumari	Leaf	Gonorrhoea
7	*Amaranthus spinosus* L.	Amaranthaceae	Hatikhutor	Roots, Stem	Gonorrhoea
8	*Anacardium occidentale* L.	Anacardiaceae	Kaju	Leaves	Gonorrhoea
9	*Areca catechu* L.	Arecaceae	Supari	Nut	Syphilis
10	*Argemone mexicana* L.	Papaverceae	Sialkatahi	Roots, Seeds	Gonorrhoea, Syphilis
11	*Carica papaya* L.	Caricaceae	Pepe	Root	Syphilis
12	*Centella asiatica* (L.) Urb.	Apiaceae	Thankuni	Whole plant	Gonorrhoea
13	*Cissus quadrangularis* L.	Vitaceae	Har jora	Whole part	Gonorrhoea, Syphilis
14	*Costus speciosus* (J.Koenig ex.Retz.) Sm.	Costaceae	Keu danga	Leaves, roots	Gonorrhoea
15	*Curcuma longa* L.	Zingiberaceae	Halud	*Flower*	Syphilis
16	*Curculigo orchioides* Gaertn.	Amaryllidaceae	Talmuli	Root	Gonorrhoea, Syphilis
17	*Elaeis guineensis* Jacq.	Palmae	Palm	Root	Syphilis
18	*Enydra fluctuans* Lour.	Asteraceae	Helencha	Leaf	Gonorrhoea
19	*Gloriosa superba* L.	Liliaceae	Bishalanguli	Whole plant	Gonorrhoea, Syphilis
20	*Gossypium hirsutum* L.	Malvaceae	Tula	Leaves	Gonorrhoea,
21	*Grewia subinaequalis* DC.	Malvaceae	Chandani shewra	Leaves	Gonorrhea
22	*Hemidesmus indicus* R. Br.	Asclepiadaceae	Anantamul	Root	Syphilis
23	*Ixora coccinea* L.	Rubiaceae	Rangan	Whole part	Gonorrhoea
24	*Jatropha curcus* L.	Euphorbiaceae	Sada Varenda	Leaves	Gonorrhoea, Syphilis
25	*Litsea glutinosa* (Lour.) C.B. Rob.	Lauraceae	Khara zura	Leaves	Gonorrhoea
26	*Mangifera indica* L.	Anacardiaceae	Aam	Leaves	Gonorrhoea, Syphilis
27	*Ocimum gratissimum* L.	Labiatae	Ram tulsi	Whole plant	Gonorrhoea
28	*Pedalium murex* L.	Pedaliacae	Gokharu	Leaves, Fruits	Gonorrhoea
29	*Phylanthus franternus* Webster	Euphorbiaceae	Bon amlokhi	Whole plant	Gonorrhoea
30	*Plumbago indica* L.	Plumbaginaceae	Agni chita	Leaves, stems	Syphilis
31	*Portulaca oleracea* L.	Portulacaceae	Portulaca	Whole part	Gonorrhoea, Syphilis
32	*Pouzolzia zeylanica* (L.) Benn.	Urticaceae	Dudhmor goch	Whole plant	Gonorrhoea, Syphilis
33	*Premna arborea* Roth	Lamiacae	Gamar	Leaves	Gonorrhoea, Syphilis
34	*Scoparia dulcis* L.	Scrophulariaceae	Chinigura	Whole plant	Gonorrhoea
35	*Sida rhombifolia* L.	Malvaceae	Bairali	Whole plant	Gonorrhoea
36	*Streblus asper* Lour.	Moraceae	Aurga	Leaves, stems	Syphilis
37	*Tamarindus indica* L.	Leguminosae	Tetul	Leaves	Syphilis



Conclusion

As the little information about the chemical components of these plants available up till now future research work hopefully will find out the detail bioactive components for the treatment of STIs.

Several plant extracts and their constituents may show the activity against STIs indicating their huge potentiality for the prevention and treatment of gonorrhea and syphilis. Herbal medicines can be developed as a safe, effective and economical alternative to drugs presently approved for symptomatic treatment of gonorrhea and syphilis.

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