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TRADITIONAL USES OF LOCALLY AVAILABLE PLANTS FOR THE TREATMENT OF URINARY DISORDERS AT BANASTHALI REGION OF RAJASTHAN, INDIA

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ABSTRACT

Urinary disorder is one of the serious health problems prevailing in our society. Rural communities inhabiting near Banasthali region of Rajasthan are known to use some locally available plants material for the treatment of urinary disorders. Hence, present study has attempted to document the traditional knowledge of curing urinary problems using locally available plants. A total of 31 plant species belonging to 29 genera of 21 families was undertaken in this study. The information about the parts of the plants and mode of the use of these plants for the treatment of urinary problems are compiled in the present work.

Keywords: Urinary retention, Irritation, Banasthali, Traditional medicine.

INTRODUCTION

Around the globe, human beings have been using various plants and animal products to deal with various diseases from time immemorial (Greenish, 1997). India is a unique country with enormous prosperity of biodiversity. Estimate indicates that

12% of world's flora and 7% of world's fauna is found in India. Out of these about 8000 plants species are used medicinally in India in Ayurvedic, Unani, Homoeopathic and Siddha system of medicine (Bhattacharjee and De, 2005).

World health organization (WHO) has compiled a list of 21000 plant species of therapeutic value and

approximately 80% of the world's population believes in traditional medicine for primary health care in different parts of the world (WHO, 2002). According to WHO, "Traditional medicine" is an extensive term used to refer various forms of indigenous medicine. Traditional medicine is also often termed "complementary", "alternative" or "non-conventional" medicine. India is a rich treasure house of plant medical traditions in the world. Rural communities in India used approximately 25000 effective plant-based formulations as traditional medicine (Wakdikar, 2004). Rajasthan has a very rich flora and a great knowledge of traditional medicines, and consequently represent a potential resource for studies. Majority of people of Rajasthan living in rural areas uses plants for food and medicine traditionally (Choudhary, 2008; Katewa, 2009).

People suffer from several urinary disorders such as urinary retention, irritation and difficulty in passing urine are common. Problems in the urinary system can be caused by ageing, illness, or injury (Noumi and Boupda, 2009). Urinary retention is also known as ischuria, any discomfort to urinate. It is defined as the inability to empty the bladder completely or partially. Urinary retention is considered as poor urinary stream with discontinuous flow. Urinary retention is a common disorder in elderly males which starts around the age of 50 years and symptoms may appear after 10–15 years (US department of health and human services, 2007). Urinary irritation is identified by frequent urination (especially at night), the patient feels burning, stinging, itching or urethral pain while urinating. Urinary irritation is also called dysuria. It includes pain and discomfort when urinating. It can occur in anyone at any age, but is most common in older men (Resnick and Older, 1997).

Rural patients are more dependent on traditional medicines for the treatment of urinary disorders. This is due to lack of access to modern medical facilities, people's faith in traditional approaches and the fear of side effects of chemical drugs. These traditional medicines have no side effects and can heal urinary problems wonderfully. The accesses to these medicines become difficult for the people who

don't have knowledge of those plants and medicines due to lack of documentation of these fascinating information. Hence, this study is made to document the precious traditional knowledge of Banasthali region for developing future conservation.

MATERIAL AND METHODS

1. Study area

Banasthali (Tonk district) region is located in Southeast part of Rajasthan state between [26.41°N](#) [75.87°E](#). It is located 72 km south west of the capital Jaipur. Banasthali is 6.1 km distance from its main town Newai. In the 2011 Indian census Banasthali had a rural population of 12835 out of which males constitute 31% and females 69% of the population. The climate of Banasthali is semi arid. The mercury touches 45°C- 47°C at summer and drops near freezing point during winter's night. The average rainfall ranges between 450 mm-530 mm. The soil of this region is sandy loam to sandy clay and contains high pH value. Banasthali harbours a variety of plants, which are very effectively being used by the local population for the treatment of various diseases including the urinary disorders and other purpose.

2. Data collection

The study was conducted in Banasthali region of Tonk district to investigate and collect the information about the use of locally available plants for the treatment of urinary disorders as traditional remedy. Extensive field survey was carried out during July 2012 - August 2013. The information was obtained through semi-structured questionnaires and interviews (with key informants such as local resident, farmers, workers, senior citizens, priest, vaidhya and rural community leaders) and cross checking at different places among rural people. Total 112 informants were interviewed (45 to 75 years) to collect data for this study. Semi-structured questionnaires consist of closed and open questions, which help to accommodate responses from different groups. The questionnaires/interviews were focused mainly on the local names of the plants, plant parts used, habit, ailments, and mode of preparations (Michael, 2009).

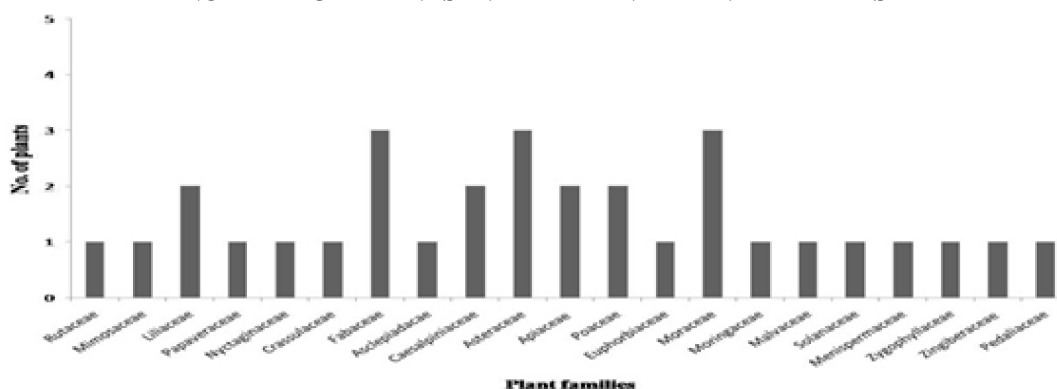
The specimens of the medicinal plants were collected, identified, dried and specimen has been deposited at the Herbarium, Banasthali University, Tonk, (Rajasthan) India (Bhandari, 1978; Jain and Rao, 1997).

RESULTS

A total of 31 plants species belonging to 29 genera and 21 families have been enumerated in present work. The data on traditional medicinal plants such as the botanical names, local names, families, ailments and medicinal uses are documented (Table 1). Traditional remedies are included for urinary

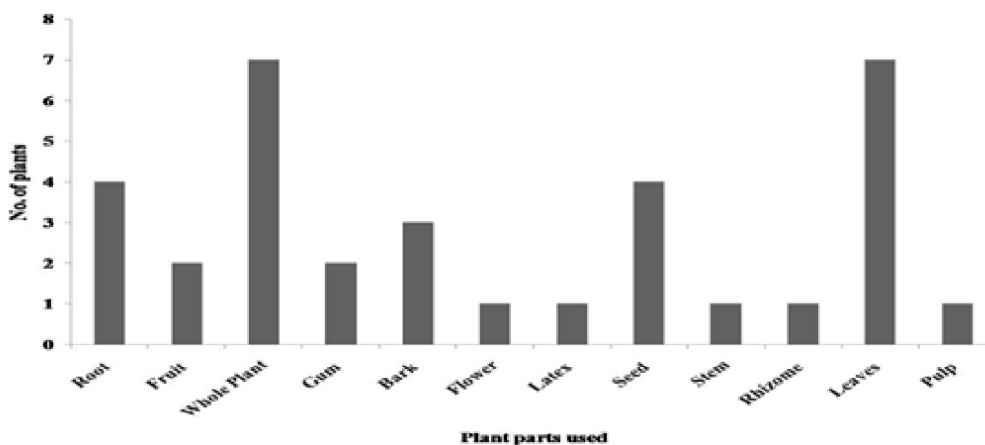
retention (62%) and urinary irritation (38%). Moraceae, Fabaceae and Asteraceae are the largest families with three species each. The plant remedies are used for oral purposes mostly extracts, powder, juice, decoction forms. The present study demonstrate that plant remedies are obtain from tree, herbs, shrubs, climbers and grasses and herb is the most used among them. Likewise, the plant material are utilized as leaves, whole plant (21.2%), followed by root (13%), bark, seed (9%), fruit, gum (6%), and flower, latex, pulp, stem, rhizome (3%). The number of plants in different plants families are representing in Figure 2.

NUMBER OF PLANTS IN DIFFERENT PLANT FAMILIES



In addition, the distribution of locally available plants by their utilized parts is demonstrated in this document (Figure 3).

NUMBER OF LOCALLY AVAILABLE PLANTS BY THEIR UTILIZED PART.



**LOCALLY AVAILABLE PLANTS FROM BANASTHALI USED FOR THE TREATMENT OF
URINARY DISORDERS BY RURAL PEOPLE.**

S. N.	Plant name	Family	Local name	Habit	Plant parts used	Type of Urinary Disorders	Mode of uses
1.	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bel	Tree	Root, Fruit	Urinary Retention	Powder of dried root is taken orally in morning.
2.	<i>Albizia lebbek</i> (L.) Benth.	Mimosaceae	Siras	Tree	Leaves	Urinary Retention	Extract of leaves is taken orally.
3.	<i>Aloe vera</i> (L.) Burm	Liliaceae	Guar- phata	Herb	Pulp	Urinary Irritation	Fresh pulp is taken orally with water.
4.	<i>Argemone mexicana</i> L.	Papaveraceae	Satyanasi	Herb	Whole plant	Urinary Irritation	Powder of whole plant is taken orally with water.
5.	<i>Asparagus racemosus</i> Willd.	Liliaceae	Chitaval	Herb	Whole plant	Urinary Retention	Extract is taken orally.
6.	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Punarnava	Herb	Leaves	Urinary Retention	Extract of leaves is taken orally with powder of some black pepper.
7.	<i>Bryophyllum pinnatum</i> (Lam.) Oken	Crassulaceae	Pattar- chata	Herb	Root	Urinary Irritation	Decoction of root is taken orally twice a day.
8.	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Dhak	Tree	Gum, Bark, Flower	Urinary Irritation	Powder of gum, bark, flowers is taken orally with some sugar and milk
9.	<i>Calotropis procera</i> (Ait.) R. Br.	Asclepiadeaceae	Aakda	Shrub	Latex	Urinary Retention	Latex mix in juice of bark of <i>Acacia nilotica</i> and applied topically on lower part of stomach.
10.	<i>Cassia occidentalis</i> L.	Caesalpiniaceae	Kasondi	Herb	Root	Urinary Retention	Decoction of root is taken orally twice a day.
11.	<i>Chrysanthemum indicum</i> L.	Asteraceae	Guldaudi	Herb	Leaves	Urinary Retention	Extract of leaves is taken orally with black pepper.
12.	<i>Clitoria ternatea</i> L.	Fabaceae	Gokharni	Climber	Root	Urinary Retention	Powder of dried root is taken orally with some water.
13.	<i>Coriandrum sativum</i> L.	Apiaceae	Dhania	Herb	Leaves	Urinary Irritation	Decoction of leaves taken orally.
14.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Dub, Ghas	Grass	Whole plant	Urinary Retention	Decoction of root is taken orally. Extract of whole plant is taken orally with milk.

15.	<i>Dalbergia sisso</i> Roxb.	Fabaceae	Sisam	Tree	Leaves	Urinary Irritation	Decoction of leaves is taken orally thrice a day.
16.	<i>Phyllanthus officinalis</i> L.	Euphorbiaceae	Aamla	Tree	Bark	Urinary Retention	Juice of fresh bark is taken orally with honey.
17.	<i>Ficus benghalensis</i> L.	Moraceae	Pipal	Tree	Seed	Urinary Retention	Powder of seed taken orally with cow's milk.
18.	<i>Ficus racemosa</i> L.	Moraceae	Gular	Tree	Fruit	Urinary Retention	Fresh fruits are eaten.
19.	<i>Ficus religiosa</i> L.	Moraceae	Bargad	Tree	Bark	Urinary Irritation	Decoction of bark is taken orally.
20.	<i>Helianthus annuus</i> L.	Asteraceae	Surajmuki	Herb	Seeds	Urinary Irritation	Seed powder is taken orally.
21.	<i>Moringa oleifera</i> Lam.	Moringaceae	Sajhana	Tree	Gum	Urinary Retention	Gum is eaten.
22.	<i>Pedaliium murex</i> L.	Pedaliaceae	Dhakni-gokhru	Herb	Whole plant	Urinary Retention	Powder of plant is taken orally with black pepper twice a day.
23.	<i>Saccharum officinarum</i> L.	Poaceae	Ganna	Grass	Stem	Urinary Irritation	Fresh juice is taken orally twice a day.
24.	<i>Sida cordifolia</i> L.	Malvaceae	Khareti	Herb	Leaves	Urinary Irritation	Extract of leaves is taken orally with sugar and black pepper separately.
25.	<i>Solanum surattense</i> Burm. F.	Solanaceae	Piliketeli	Herb	Whole plant	Urinary Retention	Fresh extract of plant is taken orally.
26.	<i>Tagetes erecta</i> L.	Asteraceae	Hazara	Herb	Leaves	Urinary Retention	Extract of leaves is taken orally with sugar.
27.	<i>Tamarindus indica</i> L.	Caesalpinaceae	Imli	Tree	Seed	Urinary Irritation	Seeds powder is taken orally with cow's milk.
28.	<i>Tinospora cordifolia</i> (Willd.)	Menispermaceae	Geloi	Climber	Stem	Urinary Retention	Extract of stem is taken orally with honey.
29.	<i>Trachyspermum ammi</i> L.	Apiaceae	Ajwayan	Herb	Seed	Urinary Irritation	Powder of seeds is taken orally.
30.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Gokhru	Herb	Whole plant	Urinary Retention	Decoction of whole plant is taken orally with honey twice a day.
31.	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Adarkh	Herb	Rhizome	Urinary Retention	Juice of rhizome is taken orally with sugar.

DISCUSSION

The study reveals that several medicinal plants products are used by rural people for the treatment of urinary disorders. The traditional medicines are easily available and are cheaper. The common man can easily afford the treatment without the least fear of any side effects. Their methods of preparation are also simple and convenient in administration. Traditional medicinal remedies comprise prominent dimensions of local health tradition and unique heritage in Banasthali. Traditional medicines are implicit source of therapeutics aids and have achieved a magnificent role in health system all over world (Yarnell, 2002). Urinary disorders are increasing worldwide and most people hesitate discussing their problems with doctors (Hossan *et al.*, 2010; Punjani, 2010). Urinary disorders (Urinary retention and Urinary irritation) are common in older people. Therefore older generation knows their traditional medicinal remedies. The traditional medicinal knowledge is very rapidly declining in India because of improper documentation. This study has proved that we need to document the knowledge of traditional medicines before it is lost forever in the fast growing modern world.

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