Polyherbal Formulation in the Treatment of Kidney Stones

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Abstract

Over the past decade, there has been a revival of interest in the study of medicinal plants as a source of potential herbal medicine in the management of kidney stones. Kidney stones formation or Urolithiasis is a medical condition where urine stones are formed in kidney, bladder and urinary tract. Now a days, formation of kidney stones is very common disorder among people. Traditional healers in study area use ethnomedicinal plants to treat the patients suffering from kidney stone problems in tribal and rural people. The present study reports how far the traditionally used polyherbal formulation (Cratava religiosa G. Forst,, Aerva lanata L., Moringa oleifera L. and Celosia argentea L.) is effective in management of Kidney stones formation.

The present study was conducted in a number of tribal and rural villages and every neck of the wood of Nagbhid Tahasil, from the district of Chandrapur, Maharashtra. The information was documented, by interviewing traditional healers for plants used in the treatment of Kidney stones. Polyherbal formulation of above plants have been reported by healers for its potential effectiveness on degradation and removal of kidney stones. We also interviewed the patients who used this polyherbal formulation prepared by them. The formulation has given the best result for treatment of kidney stones/urolithiasis. We can rethink about Traditional polyherbal formulations and specially use of this drug is need to be formulated for highly effective treatment of kidney stones.

Keywords*:* *Polyherbal formulation, Traditional Healers, Kidney stones.*

INTRODUCTION

According to WHO, it has been estimated that about 80% of the raw materials for drugs used in the Indian systems of medicine are based on plant products. In order to authenticate such drugs it is important to look for the ancient writings, scientific interpretations of folklore and field work among the aboriginals who are living in close association with plant wealth of the nation.

WHO has estimated that 80% of the world's populations rely primarily on traditional medicine (WHO, 1978; Okerele, 1992). In India, it is reported that traditional healers use 2500 plant species and 100 species of plants serve as regular sources of medicine (Pei, 2001). During the last few decades there has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world. Traditional medical knowledge of medicinal plants and their use by indigenous cultures are not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future Pei (2001).

Medicinal plants have played a significant role in various ancient traditional systems of medicine in urolithiasis & it is widely accepted. There is sufficient evidence that herbal extracts have anti-urolithiatic potential. Around 12% of people worldwide will get kidney stones at certain time in their lives. Kidney stones raise the risk of developing chronic kidney disease by 60% and end-stage renal disease by 40%, and papillary renal cell carcinoma has also been linked to kidney stones (Aldaher et al.2021).

The utilization of herbal products has recently gained more attention due to the high cost and negative side effects of instrument implantation and urinary tract surgery. The therapeutic effects of medicinal plants on kidney and urinary tract disorders have been variously studied and their efficacy has been demonstrated Gupta & Chaphalkar (2016).

The objective of this study was to interact with local traditional healers and document their traditional knowledge of medicinal plants, their preparations/formulations in the management of kidney stones..

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Study Area: Nagbhid Tehsil

Nagbhid is a town and tehsil in Chandrapur district of Maharashtra. The tribals invaded and localized in the Nagbhid Tahsil are Mana, Gond, Pardhan, Halba, Gond-Gowari and Paradhi. The survey includes all the tribal ranges of the study area. It also includes a major forest range which reveals the maximum diversity of the ethnomedicinal plants.

MATERIAL AND METHODS:

The study was carried out in the tribal region of Nagbhid Tahsil during the period (July, 2020 to September, 2021). A large number of places were visited in tribal localities of Nagbhid tehsil. The 23 tribal villages were surveyed through periodical tours in tribal localities. The information was documented involving field study by contacting and interviewing Vaidu, Hakims and traditional and local herbal healers for plants used to cure piles. The tribals and other villagers who had used these medicines prepared by local ethnic medicine-men were also interviewed of age group from 19 to 76 years and were resident of rural & tribal pockests in the tehsil. The botanical names, vernacular names, family and method of treatment and mode of preparation of drug have been documented.

The present documentation was not earlier reported. Voucher specimens of medicinal plants were collected, prepared and identified. All the preserved specimens were deposited at the Department of Botany, R. M. Gandhi Arts & Science College, Nagbhid, Dist. Chandrapur (M.S.).

OBSERVATIONS:

The tribals invaded and localized in the Nagbhid Tahsil are Mana, Gond, Pardhan, Halba, Gond-Gowari and Paradhi. These tribes as per socioreligious rituals worship nature. The wealth of medicinal plant knowledge among the people of this tehsil is based on hundreds of years of beliefs and observations. This knowledge has been transmitted orally from generation to generation.

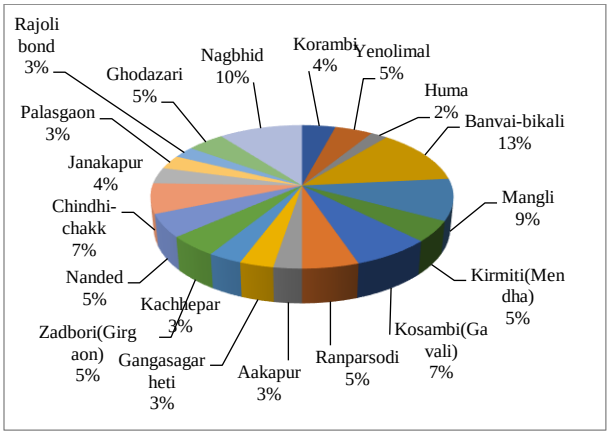
Traditional healers collect different parts of plant for medicinal purposes. The tribals and peoples of adjoining areas were observed suffering from kidney stones. The medicinal plants; Cratava religiosa G. Forst., Aerva lanata L. , Moringa oleifera L. and Celosia argentea L. are the most commonly used herbal drug in the treatment of kidney in this region. The method of preparation & dosages for management of kidney stones are described as below.

Method of preparation of & administration of polyherbal decoction :

Shade dried plant parts of Cratava religiosa stem bark, Aerva lanata whole planr, Moringa oleifera stem bark and Celosia argentea seeds in equal quantity were powdered. This mixture of powder is added in water (1: 16) and heated until the original volume is reduced to one fourth. This polyherbal formulation cooled, strained and stored for further use.

The patients suffering from kidney stones were cured by oral administration of 15 ml of above polyherbal formulation twice a day for two weeks. The patients cured by using this polyherbal treatment in different villages in Nagbhid Tahsil are shown in Fig. 1.

Fig.- 1. % of Patients cured suffering from kidney stones in different villages



DISCUSSION:

Such type of documentation bring out many different clues for the development of drugs to treat human diseases. Safe, effective, and inexpensive indigenous remedies are gaining popularity equally among the people of both the urban and rural areas, especially in India and China (Katewa et al., 2004).

The bark C. religiosa is used in the urinary disorders including kidney and bladder stones, antiemetic, and calculous affections and as an antidote in snakebite (Bhatachargee 2001). Roots and bark in the form of decoction are used as calculus affections [http/www.bpi.da.gov.ph. 2009]. Aerva lanata is seems to be having more potential to used as remedies for removal of kidney stone and lowering the abdominal pain (Bhise,2022)

The phytochemical investigation revealed the presence of saponin glycosides in AqE of root bark of M. oleifera. Lupeol, a sapogenin isolated from the bark of Crataeva nurvala was shown to possess antiurolithiatic activity (Baskar et al., 1996). Seeds extract of C. argentia is effective in the treatment for urinary for renal calculi (Patel et al.) 2011.

CONCLUSION:

In conclusion, the presented data supports the folklore usage of above plants in the treatment of patients suffering from kidney stones. The mechanism underlying this effect is still unknown but is apparently related to diuresis and lowering of urinary concentrations of stone forming constituents.

A wide range of plants and plant derived products are used in folk medicine for the treatment of urolithiasis as a prophylactic agent or as curative agent. The tribal community depends for their medical aid on local and traditional healer existing near

habitat. The number of the patients interviewed in 23 villages for using these herbal medicines in the treatment of kidney stones.

The information as a outcome of study will serve as a useful tool to botanists, pharmacologists, practitioner of herbal medicine, foresters, planners and administrators in the preparation of action and development plans for the conservation.

We can also rethink about traditional polyherbal formulations and specially use of this drug is need to be formulated for highly effective treatment of kidney stones.

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