AN UPDATED REVIEW ON ANTHELMINTIC MEDICINAL PLANTS

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ABSTRACT

Medicinal plants are part and parcel of human society to combat diseases, from the dawn of civilization. There exists a plethora of knowledge, information and benefits of herbal drugs in our ancient literature of Ayurvedic (Traditional Indian Medicine), Siddha, Unani and Chinese medicine. According to the World Health Organization, 2003 about 80 % of the population of developing countries being unable to afford pharmaceutical drugs rely on traditional medicines, mainly plant based, to sustain their primary health care needs. Herbal medicines are in great demand in the developed as well as developing countries for primary healthcare because of their wide biological and medicinal activities, higher safety margins and lesser costs. In this review we have enlisted the updated anthelmintic medicinal plants which are used as good alternatives for the traditional allopathic anthelmintic agents. Key words: Traditional Indian Medicine, primary healthcare, anthelmintic medicinal plants

INTRODUCTION

 helmintic infections are among the most common infections in human beings, affecting a large proportion of the world’s population. In developing countries they pose a large threat to public health and contribute to the prevalence of anaemia, malnutrition, eosinophilia and pneumonia. The helminths which infect the intestine are cestodes e.g. Tape worms (Taenia solium), nematode hook worm (Ancylostoma duodenale), round worm (Ascaris lumbricoides) and trematodes or flukes (Schistosoma mansoni and schistosoma haematobium). The diseases originated from parasitic infections causing severe morbidity include lymphatic filariasis, onchocerciasis and schistosomiasis. These infections can affect most populations in endemic areas with major social and economic consequences. The traditional medicines hold a great promise as source of easily available effective anthelmintic agents to the people, particularly in tropical developing countries, including India. It is in this context that the people consume several plants or plant derived preparations to cure helmintic infections. Ideally an anthelmintic agent should have broad spectrum of action, high percentage of cure with a single therapeutic dose, free from toxicity to the host and should be cost effective. none of the synthetic drug meets this requirement. Even the most common drugs like Piperazine salts have been shown to have side effects like nausea, intestinal disturbances and giddiness, resistance of the parasites to existing drugs and their high cost warrants the search for newer anthelmintic molecules. The origin of many effective drugs is found in the traditional medicine practices and in view of this several researchers have under taken studies to evaluate folklore medicinal plants for their proclaimed anthelmintic efficacy. Most of the screenings reported are in vitro studies using some worm samples like Indian earth worm Pheretima posthuma, Ascaris galli, Ascaris lumbricoides etc. Adult Indian earthworm, Pheretima posthuma has been used as test worm in most of the anthelmintic screenings, as it shows anatomical and physiological resemblance with the intestinal round worm of parasite of human beings. Because of easy availability, earthworms are used as suitable models for screening anthelmintic drug.

In this present review, we discussed the different anthelmintic plants which are scientifically reported by various researchers during Jan-dec 2011.

Table 1: List of anthelmintic plants

<table>
<thead>
<tr>
<th>Botanical name</th>
<th>Family</th>
<th>Parts used</th>
<th>Extracts used</th>
<th>Chemical constituents</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accasia Suma Roxb.</td>
<td>Fabaceae</td>
<td>Bark</td>
<td>Chloroform, pet. ether</td>
<td>Gallo-catechins</td>
<td>Acharaya Suman et al.</td>
</tr>
<tr>
<td>Acalypha Fructicosa</td>
<td>Euphorbiaceae</td>
<td>Whole Plant</td>
<td>Methanol</td>
<td>Tannins, flavonoids</td>
<td>Lakshmypathy et al.</td>
</tr>
<tr>
<td>Acalypha indica Linn</td>
<td>Euphorbiaceae</td>
<td>Leaves</td>
<td>Pet. ether, alcohol</td>
<td>Alkaloids, saponins</td>
<td>Garai Ranju et al.</td>
</tr>
<tr>
<td>Aegle marmelos Linn</td>
<td>Rutaceae</td>
<td>Fruits</td>
<td>Ethanol</td>
<td>Tannins</td>
<td>Bhawana Sati et al.</td>
</tr>
<tr>
<td>Ailanthus excelsa Roxb.</td>
<td>Simaroubaceae</td>
<td>Bark</td>
<td>Ethanol</td>
<td>Alkaloids, flavonoids</td>
<td>Kasarwala et al.</td>
</tr>
<tr>
<td>Anemone vitifolia Var</td>
<td>Ranunculaceae</td>
<td>Root</td>
<td>Ethanol</td>
<td>Glycosides, alkaloids</td>
<td>Bhawana Sati et al.</td>
</tr>
<tr>
<td>Barringtonia acutangula Gaertn</td>
<td>Lecythidaceae</td>
<td>Leaves</td>
<td>Ethanol</td>
<td>Terpenoids, tannins</td>
<td>Padmanavathi et al.</td>
</tr>
<tr>
<td>Bauhinia purpurea Linn</td>
<td>Fabaceae</td>
<td>Whole Plant</td>
<td>Acetone</td>
<td>Leutin</td>
<td>Kumar et al.</td>
</tr>
<tr>
<td>Bauhisia racemosa Linn</td>
<td>Fabaceae</td>
<td>Whole Plant</td>
<td>Pet. ether, ethanol, Aqueous</td>
<td>Kaemptferol, coumarins, steroids</td>
<td>Tekeshwar kumar et al.</td>
</tr>
<tr>
<td>Caesalpinia pulcherrima Linn</td>
<td>Leguminaceae</td>
<td>Flowers</td>
<td>Ethanol, Pet. Ether</td>
<td>D-terpenoids</td>
<td>Dhaked et al.</td>
</tr>
<tr>
<td>Cassia tora Linn</td>
<td>Fabaceae</td>
<td>Leaves</td>
<td>Aqueous, ethanol</td>
<td>Alkaloids, saponins</td>
<td>Bimalesh kumar et al.</td>
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<td>Cassia tora Linn</td>
<td>Fabaceae</td>
<td>Leaves</td>
<td>Aqueous, ethanol</td>
<td>Alkaloids, saponins</td>
<td>Bimalesh kumar et al.</td>
</tr>
<tr>
<td>Cissampelos pareira Linn</td>
<td>Menispermaceae</td>
<td>Leaves</td>
<td>Aqueous</td>
<td>Alkaloids, saponins</td>
<td>Shukla et al.</td>
</tr>
<tr>
<td>Citrus aurantium Linn</td>
<td>Rutaceae</td>
<td>Fruit juice</td>
<td>Water</td>
<td>Alkaloids, steroids</td>
<td>Bidkar et al.</td>
</tr>
<tr>
<td>Cymbopogon Martinii Roxb.</td>
<td>Poaceae</td>
<td>Leaves</td>
<td>Aqueous</td>
<td>Geraniol</td>
<td>Katki et al.</td>
</tr>
<tr>
<td>Cymbopogon schoenanthus Linn</td>
<td>Poaceae</td>
<td>Leaves</td>
<td>Aqueous</td>
<td>Geraniol</td>
<td>Katki et al.</td>
</tr>
<tr>
<td>Clerodendrum phlomidis Linn</td>
<td>Verbanaceae</td>
<td>Aerial parts</td>
<td>Methanol, Ethyl acetate</td>
<td>Tannins, flavonoids, terpenoids</td>
<td>Vincent et al.</td>
</tr>
</tbody>
</table>

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Traditional systems of medicine are popular in developing countries and up to 80% of population relies on traditional medicines or folk remedies for their primary health care needs. Herbal medicines are in great demand in the countries and upto 80% of population relies on traditional medicines or folk remedies for their primary health care because of their wide biological and medicinal activities, higher safety margins and lesser costs. The present review study give evidential explore mechanism of action of medicinal plants against experimentally induced helminthiasis. Hence the review study is concluded that the herbal drug possesses anthelmintic activity and it has been proved by earth worm model gives many links to develop the future trials.

REFERENCES


