The Galactagogues Use by Indian Tribal Communities to Over Come Poor Lactation

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Abstract

The main objective of this article is to document and represent the medicinal herbs and/or animals (zootherapeutic medicine) used as a “Galactagogue” by Indian tribal communities, and the investigated galactagogue has been enumerated according to the biological source, local or tribal name, adverse effects and mode of administration prescribed by different medicine experts to overcome the problem of lack of lactation in human and ruminants also.

Keywords: Galactagogue, Zootherapeutic medicine, Lactation, Tribal communities, Ruminants.

1. Introduction

The use of plants as medicine is widespread throughout the world. It is estimated that more than 35,000 plant species are being used around the world for medicinal purposes. India is endowed with rich wealth of medicinal plants which are widely used by all sections of people either directly as folk remedies or in different indigenous systems of medicine or indirectly in the pharmaceutical preparations of modern medicines. More than 8,000 plants are used in our country especially for their medicinal values by the rural people. The traditional wisdom is based on the intrinsic realization that man and nature form part of an indivisible partner and should live in partnership with each other. The plant and plant products have augmented human culture since time immemorial. But few people realize that plant species an important part of our environment. Many traditional societies have accumulated a whole lot of empirical knowledge on the basis of their experience dealing with nature and natural resources. They living in biodiversity rich areas possess a wealth of knowledge on the
local utilization and conservation of food and medicinal plants. The knowledge of medicinal has been accumulated in the course of many centuries based on different Indian systems of medicines such as Ayurveda, Unani and Siddha. These systems of medicine play a very important role in healthcare system of rural people covering all types of ailments and developed over years of observation, trial and error, inference and inheritance has largely remained with the aboriginal people. Traditional medicinal practices and ethnobotanical information play an important role in the scientific research, particularly when the literature and field work data have been properly evaluated. The documentation of indigenous knowledge on the utilization of local plant resources by different ethnic groups or communities is one of the main objectives of ethnobotanical research. Therefore, the study was undertaken with a view to provide a comprehensive account of folklore medicinal plants or animals as Galactagogues in the study area.

2. Importance and General Physiology of Lactation

Under nutrition is associated with more than one third of the global disease burden for children under five. Infant and young child feeding is a key area to improve child survival and promote healthy growth and development. The first two years of a child’s life are particularly important, as optimal nutrition during this period lowers morbidity and mortality, reduces the risk of chronic disease, and fosters better development overall. In fact, optimal breastfeeding and complementary feeding are so critical that they could save about 220 000 lives per year In adult life the human breast, unlike that of other species, is sufficiently developed to allow milk secretion to occur after only a brief period of hormonal stimulation. During pregnancy the ducts and secretory alveoli develop under the influence of both oestrogen and progesterone. Growth hormone and placental lactogen are not required; the role of prolactin in mammogenesis remains questionable. Lactogenesis, the onset of milk secretion, is inhibited during pregnancy despite high levels of prolactin, by a direct inhibitory action of steroids on the breast. The clearance of placental steroids after delivery removes this inhibition and milk secretion is initiated. Inhibition of prolactin secretion prevents milk secretion, suggesting that prolactin is the essential hormone for lactation in man. Prolactin release occurs in response to suckling and the amount released depends on the strength and duration of the suckling process. No release of prolactin occurs in response to stimuli other than stimulation of the nipple. Removal of milk from the mammary gland is effected by the milk-ejection reflex (MER) involving the release of oxytocin in response to suckling. Unlike prolactin, oxytocin may be released in response to stimuli associated with breast-feeding, e.g. the cry of the infant. The MER may be inhibited by psychological and physical stress, either by inhibiting oxytocin release or by preventing its action upon the breast contractile elements. The susceptibility of the MER to disturbance requires consideration when encouraging the establishment of breast-feeding. Breast-feeding is geared directly to the needs of the infant, since not
only does the suckling infant obtain its present meal by inducing oxytocin release, but also by stimulating prolactin release it orders the next.

3. Galactagogues
A galactagogue or galactogogue is a substance that promotes lactation in humans and other animals. It may be synthetic, plant-derived, or endogenous. Here we mansion some galatagogues mostly used by tribal communities of India

<table>
<thead>
<tr>
<th>Galactagogues</th>
<th>Family</th>
<th>Parts</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus recemosus</td>
<td>Liliaceae</td>
<td>Roots &amp; Whole plant (Powder)</td>
<td>Sikkim, Bihar, Assam, Chhattisgarh, Maharashtra, Rajasthan, Madhya Pradesh</td>
</tr>
<tr>
<td>Arundinella setosa</td>
<td>Poaceae</td>
<td>Whole plant(Paste)</td>
<td>Tamilnadu, Kerala</td>
</tr>
<tr>
<td>Alternanthera sessilis</td>
<td>Amaranthaceae</td>
<td>Leaves (Decoction)</td>
<td>Karnataka</td>
</tr>
<tr>
<td>Alstonia scholaris</td>
<td>Apocynaceae</td>
<td>Bark (Decoction)</td>
<td>Andhra Pradesh, Gujrat</td>
</tr>
<tr>
<td>Curculigo orchiodes</td>
<td>Amarylidadaceae</td>
<td>Roots (Powder), Seeds</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>Euphorbia hirta Euphorbia fusiformis</td>
<td>Euphorbiaceae</td>
<td>Whole plant (Juice) Tuber (Powder)</td>
<td>Uttar Pradesh, Madhya Pradesh, Maharashtra, West Bengal, Chhattisgarh</td>
</tr>
<tr>
<td>Ichnocarpus frutescens</td>
<td>Apocynaceae</td>
<td>Leaves, Root (Decoction, Powder, Juice)</td>
<td>Andhra Pradesh, Karnataka</td>
</tr>
<tr>
<td>Madhuca longifolia</td>
<td>Sapotaceae</td>
<td>Leaves &amp; Dried fruits (Decoction)</td>
<td>Chhattisgarh, Gujrat</td>
</tr>
<tr>
<td>Plant Name</td>
<td>Family</td>
<td>Parts Used</td>
<td>Geographical Distribution</td>
</tr>
<tr>
<td>--------------------</td>
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<td>--------------------------------------------</td>
</tr>
<tr>
<td>Nigella sativa</td>
<td>Ranunculaceae</td>
<td>Seeds (Powder)</td>
<td>Assam, Arunachal Pradesh, Meghalaya</td>
</tr>
<tr>
<td>Pheretima posthuma*</td>
<td>Megascoleciidae</td>
<td>Whole Body</td>
<td>Chhattisgarh, Jharkhand, Madhya Pradesh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Powder, Decoction, Paste)</td>
<td>West Bengal, Orissa</td>
</tr>
<tr>
<td>Piper nigrum</td>
<td>Piperaceae</td>
<td>Roots, Fruits</td>
<td>Tamilnadu</td>
</tr>
<tr>
<td>Pouzolzia zeylanica</td>
<td>Urticaeae</td>
<td>Whole plant</td>
<td>Chhattisgarh, Jharkhand, Rajasthan</td>
</tr>
<tr>
<td>Ricinus communis</td>
<td>Euphorbiaceae</td>
<td>Leaves (Decoction), Seed oil (Topical use)</td>
<td>Gujrat, Rajasthan</td>
</tr>
<tr>
<td>Tinospora cordifolia</td>
<td>Menispermacae</td>
<td>Roots (Powder)</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>Vitex negundo</td>
<td>Verbenaceae</td>
<td>Seeds</td>
<td></td>
</tr>
</tbody>
</table>

*Pheretima posthuma is an Annelid (Earthworm)
Figure I: Galactagogues.

A- Asparagus recemosus  
B- Arundinella setosa  
C- Alternanthera sessilis  
D- Alstonia scholaris  
E- Curculigo orchioides  
F- Euphorbia hirta  
G- Euphorbia fusiformis  
H- I. frutescens  
I- Madhuca longifolia  
J- Nigella sativa  
K- Pheretima posthuma  
L- Piper nigrum  
M- Pouzolzia zeylanica  
N- Ricinus communis  
O- Tinospora cordifolia  
P- Vitex negundo

4. Some traditional formulations:-

<table>
<thead>
<tr>
<th>S.N</th>
<th>Galactagogues</th>
<th>Formulations</th>
</tr>
</thead>
</table>
| 1   | Asparagus recemosus  
(Shatavari) | Dried powder of Roots of Shatavari 2-5 gm given to lactating mother with milk daily. (by Bhil tribe) |
| 2   | Euphorbia hirta  
(Dudhai) | Fresh juice of plant 10-15 ml given to lactating mother with honey. It is also induce the lactation. (by Baiga tribe) |
| 3   | Pheretima posthuma  
(kenchua) | Dried earthworm as powder or fresh as paste 3-6 earthworms with milk. Decoction of dried earthworms is also in tradition. It is very effective, a single does can induce the lactation.(by Sahariya tribe) |
| 4   | Ricinus communis  
(Anddi, Arand) | Decoction of fresh leaves and seed oil for massage of breasts |

5. Conclusion
There are over 400 different tribal and other ethnic groups in India which constitute about 7.5 % of India’s population. Tribal, rural and primitive societies have discovered solution for treatment of disease to almost all their needs and problems from the natural resources around them. Hence, in recent years, ethnomedicinal studies received much attention as this brings to light the numerous little known and unknown medicinal virtues especially of plant origin which needs evaluation on modern scientific lines such as phytochemical analysis, pharmacological screening and clinical trials. These Plants and Animal possess Galactagogual activities as discussed in present paper. However, it is imperative that more clinical and pharmacological studies should be conducted to investigate the unexploited potential of these Galactagogues.
6. Acknowledgement
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References