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ANTI LICE ACTIVITY OF *KOLAKHAR*

Pallab Kalita*[a], Chandi Charan Kandar[b], Biplab Kumar Dey[a], Bhargab Jyoti Sahariah[a]

[a] Institute of Pharmacy, Assam down town University, Guwahati, Assam, India.

[b] Institute of Pharmacy Jalpaiguri , Department of Pharmaceutical Chemistry, Jalpaiguri, Pin-735101,W.B, India.

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For Correspondence:

Pallab Kalita

Institute of Pharmacy, Assam down town University, Guwahati, Assam, India.

E-mail:

kalitapallab@gmail.com

ABSTRACT

There may be scientific reasons behind the uses of ethinic products. kolakhar a product made up from the *Musa balbisiana colla* was used to clean the cloths as well as to kill the leaches in Assam from ancient time. Who loves to grow hairs, *Pediculus humanus capitis* commonly known as human head lice is one of the major problems among the femal gender in countries like India. They may not causes any diseases but considerably they give impact on health of humans. The present study aims at exploring the anti-lice property of kolakhar against the human head lice. To provide scientific basis for the traditional claim it was compared with the benzyl benzoate. At 20% concentration, kolakhar showed 80% mortality in 90 minutes. At the concentration of 10% and 15%, kolakhar also showed significance results. From this result we suggest that *kolakhar* can be used and formulated as an anti lice agent.

INTRODUCTION

Due to unhygienic conditions, head lices *(Pediculus humanus capitis*) are growing to the scalp of hair. These are especially common among school children in both developed and developing countries. The infestation may occurs in both sexes. Due to the infection skin irritation, pruritus and sleep loss as well as occasional secondary bacterial infection may occurs. Although the symptons are relatively mild, infestation by *P.humanus capitis* has resulted in various social, mental and economic problems. There are lots of synthetic pediculocides in the market but their repeated use results in development of resistance . The human head louse is a grey-white tiny animal, which ranges about 2mm-3mm in length. The life-span of a female louse is 30days; within itself it will get mature and produces 7-10 eggs (nits) per day. These nits are attached with a glue-like substance and after 6-10 days, the nits hatch as nymphs and become adults in 10 days[1,2,3] .

Kolakhar is a ethinic herbal soda which is mainly prepared from the banana plant (Musa balbisiana colla.). *Kolakhar* (KK) is a traditional soda of Assam. Locally, it is prepared from banana tree. KK is widely used as a detergent or soaps from ancient time to wash cloths and hair. Traditionally, it is used as a food additives, especially as a boiling agents. In the rural part of Assam, KK is familiar to treat stomach disorder, respiratory tract disorder and as an antibacterial agents. It is also used as a pesticides in different aggricultural fields .people from the different rural areas of Assam, believed that this product also having the analgesic activity[4,5]. Different parts of banana tree are used to prepare the natural soda commonly known as *"kolakhar"* in Assam, India. Rhizomes, stem peels are commonly used for this preparation. In general, Kolakhar prepared from Athiya kol (*Musa balbisiana*) was observed to be redish in colour and more dense compared to the *Kolakhar* obtained from different species of Banana plants . People believed that *khar* obtaining from athiya kol is more effective than others[5,6].

Clean the plant parts with normal water to remove the unwanted materials such as soil. Then slice the different parts in to smaller size and dried in proper sunlight. Then the plant materials was subjected for ignition in open air to convert it to ash. These ash is locally called as a *kolakhar* in Assam. The ash was mixed with sufficient ammount of water and filtered through a clean dried thin cotton fabric. The filtrate was collected and used in preparing different traditional dishes of Assam[4,5,6]. The present study aims at exploring the anti-lice activity of *kolakhar* against human head lice *Pediculus humanus capitis*.

METHODS AND MATERIALS

Plant material

The whole plant of *Musa balbisiana* was collected locally from village Ischadagharia, Kamrup, Assam, India. The plant materials were identified and authenticated taxonomically by an expert taxonomist of Guwahati University, Assam (Authentication No- 17891).

Preparation of *kolakhar*-

A mixture of 25 gm dry ash of whole plant of *Musa balbisiana* and 500ml of distilled water taken in a one litre conical flask was stirred magnetically for one hour. After filtering, the residue washed with distilled water. The filtrate (light yellow colour) is known as *kolakhar*. Then the *kolakhar* is concentrated by evaporation. Dried extracts were kept in refrigerator and used for further study.

Anti lice activity-

Collection of Head Lice-

Adults *Pediculus humanus capitis* were collected from females of age group 18-22 by combing through sections of scalp using a clean comb. The subjects were selected on the basis that, they were not been treated with any anti-lice treatment in the preceding three months. After combing, the lice were carefully removed from the teeth of comb and put into plastic boxes .

Experimental Procedure[2,3]-

Kolakhar were subjected for anti-lice activity by filter paper diffusion technique. All four different concentrations (5, 10, 15 and 20%) were tested. After careful selection under a dissecting microscope, the adults were identified and separated. All the test organisms were divided into 9 alphabetical groups (10 lice each group) and were placed on a filter paper at the bottom of Petri dish and kept open. A 0.5 ml of each test samples was poured on the test organisms and allowed to spread as a thin layer of 4 cm2. Group A treated with 0.5 ml distilled water and served as control.Group B, C, D and E (test groups) received 0.5 ml of various concentrations of *kolakhar* respectively. Group F, G,H and I were treated with 0.5 ml of 5, 10, 15 and 20% of benzyl benzoate (w/v).

The head lice as dead or alive were observed at three intervals of 30, 60, and 90 minutes. The test was done in triplicate and the average number of dead and alive lice was considered. If there were no symptoms of activity shown on the head lice (upon stimulation with a forceps), they were considered dead.

RESULTS AND DISCUSSION

The present study was carried out to evaluate the anti-lice property of *kolakhar*. By using filter paper diffusion method at 5%, 10%, 15% and 20% concentration, this anti lice activity experiment was carried out. Benzyl benzoate was used at the same concentrations as reference standard. The study was evaluated against human head lice, *Pediculus humanus capitis* with 10 lice of adults in each group. All the concentration of kolakhar was shown significant anti-lice activity according to their dose or concentration. The results were comparable with the standard, benzyl benzoate. The results were exhibited in table 01.

Now a days, In the market different synthetic pediculicidal agents are available. But they are cost effective and expensive. These agents are found to be sometimes neurotoxic also .Traditionally, this ethnic product is used in Assam from ancient time to wash the cloths, to clean the hairs and remedies for the treatment of some diseases. Natural source remains a boon to meet out these necessities with less or non toxic and cost effective. 100% mortality of human head lice, *Pediculus humanus capitis* was observed with benzyl benzoate standard drug, where as the maximum average mortality for the *kolakhar* was seen at concentration of 20% with 80.00%. However, all the extracts were found to be anti-lice effective dose dependently.

Table 1: Anti lice activity of *kolakhar*

Sr. No	Test drugs	Concentration	% of Mortality (Mean)		
			After 30 min.	After 60 min.	After 90 min.
1	Distilled Water	--	00	00	00
2	*Kolakhar*	5	00	00	20
		10	10	20	40
		15	20	40	60
		20	30	50	80
3	Benzyl Benzoate	5	20	40	60
		10	30	40	60
		15	50	70	90
		20	60	70	100

CONCLUSION

From the current study, we observed the antilice activity of *kolakhar* according to their concentration. With more investigation and proper scientific formulation may be give a good herbal anti lice agent.

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