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A study on “Trini Dravyani Na Ati Upayunjita” with special reference to *Lavana* as a *Nidana* for *Khalitya*

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ABSTRACT

Introduction: *Pippali* (long pepper), *Kshara* (alkali) and *Lavana* (salt) are referred to as “*Trini Dravyani Na Ati Upayunjita*” by *Charakacharya*. It is quoted that when these *Dravyas* are consumed in excess produces ill-effects to the body. In present era people are going blank in the context of differentiating greed and need of the body. So people are going behind the fast food (spicy and salty food). It makes food delicious. It is used as an appetizer and digestive agent. The National Academy of Sciences United States recommended that adult dietary sodium intake should be below 2300 mg/day with 1200 to 1500 mg/day being considered an adequate intake for optimal health. *Charakacharya* mentioned excessive intake of *Lavana* leads to *Khalitya*. As *Lavana* is having *Ushna* and *Teekshna* property, it does *Pitta Prakopa* leading to *Khalitya*. Hence the study has been taken up as an attempt to assess the role of excessive intake of *Lavana* leading to *Khalitya*. **Aims and Objectives:** To review the literatures on *Trini Dravyani Na Ati Upayunjita*, *Lavana*, *Pippali*, *Kshara* and disease *Khalitya* and to evaluate the effect of *Atisevana* of *Lavana* as a causative factor for *Khalitya*. **Results:** In classics excessive intake of *Lavana* is said as one of the causative factor leading to *Khalitya*. This is revalidated by the results obtained. **Conclusion:** Survey study conducted on 100 patients of *Khalitya* provides significant impact of *Lavana* in causing *Khalitya*.

Key words: *Khalitya*, *Lavana*, *Pippali*, *Kshara*, *Atisevana*.

INTRODUCTION

There is no doubt on that the world of today is full of glamour and glory. Thus, the concept of beauty is gaining more and more attention globally, which is defined on many factors, among them hair is an important one. So hair adorns the most highlighting

part of the body. Even thousand years ago, in Ayurvedic literature, so many types of daily regimens for hair care have been described in the chapter of *Dinacharya* and *Ritucharya*, which includes some procedures like *Murdha Taila*, *Nasya*, *Snana* and also taking food play an important role. According to Ayurveda this can be classified as “*Prajnaparadha*”. *Pippali* (long pepper), *Kshara* (alkali) and *Lavana* (salt) are referred to as “*Trini Dravyani Na Ati Upayunjita*” by *Charakacharya*. It is quoted that when *Kshara* and *Lavana* are consumed in excess, they produce ill-effects to the body. In present era people are going blank in the context of differentiating greed and need of the body. So people are going behind the fast food (spicy and salty food) which is clear by the growing number of *Dhabhas*, chinese food stall and junk food industry. *Lavana* has *Ushna* and *Teekshna* property. It makes food delicious. It is used as an appetizer and

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digestive agent. When excessively used leads to fatigue, lassitude and weakness in the body. Rather than *Pippali* and *Kshara*, in every region, *Lavana* is used in routine diet. In Ayurvedic approach, falling of hair is coined out as in term of ‘*Khalitya*’ under the broad heading of *Shiroroga*. It is mentioned excessive intake of *Kshara* and *Lavana* leads to *Khalitya* and *Palitya*. There are other *Dravyas* like *Chitraka*, *Bhallataka* etc. which are also not to be used in excess, but only *Pippali*, *Kshara* and *Lavana* has been mentioned as these are commonly used in the routine diet.

Lavana is essential component of diet. It should not be used in excessive quantity. It is beneficial to body if used in small quantity. *Lavana* is associated with *Ushna* (hot) and *Tikshna* (sharp), *Anatiguru* (neither very heavy) and *Anatisnigdha* (nor very unctuous) properties. It is *Upakledi* (deliquescent), *Visransansamartha* (capable of producing laxative effect), and *Annadravyarucikara* (increase taste of food). If it is used in proper quantity then produce excellent consequences. If used improperly, then it is responsible for the accumulation of *Dosha*. It is used as an appetizer, digestive agent and deliquescent and laxative. Those persons accustomed to the excessive use of *Lavana* suffer from premature *Khalitya*, *Palitya* and *Valaya*. So, concluded that in small dose *Lavana* can even be used continuously in the preparations of food articles but such continuous use in large dose is harmful.^[1]

Lavana is associated with *Ushna* and *Tikshna Guna*. It is neither *Guru* nor *Snigdha*. It makes food delicious (*Annadravyaruchikaranam*). It is told as *Aapaatabhadra* when properly used it gives good results, if not leads to accumulation of *Doshas*. But when excessively used, it produces *Glaani*, *Shithilata*, *Dourbalya*. People of villages, cities and countries, who continuously use this in large quantity have *Shithila Mamsa* and *Shonita*, they are unable to withstand hardships. They are the people of Bahlika, Saurashtra, Saindhava and Souvira, they take salt even with milk. Even in the localities having saline soil, *Aoushadha*, *Veerudha*, *Vanaspati* and *Vanaspatya* do

not grow at all or grow very sluggishly because of the inhibiting effect of the salt in soil. People who are accustomed to the excessive use of salt suffer from premature *Valaya*, *Palitya* and *Khalitya*.^[2]

Chakrapani in commentary clarifies about *Lavanam Na Atiupayunjita* that *Lavana* should not be taken in excess and for longer duration. But in the form of *Annadravya Samskara* it is taken daily (longer duration) in lesser quantity. But some people will use more quantity of salt with food.^[3] *Lavana* when taken in excess quantity leads to disorders like *Akshipaaka*, *Raktapitta*, *Kotha* etc. along with *Vali*, *Palitya* and *Khalitya*.^[4]

The Institute of Medicine has established that the adequate intake of dietary salt is 3.8 mg/day for most adults. If you are over age 50, the figure is as low as 3.0 mg/day, and if you have a condition such as high blood pressure, your doctor may urge you to consume even less.

High-salt diets cause excess sodium accumulation around the hair follicles, preventing the absorption of vital nutrients required for healthy hair. This, in turn causes hair loss. Increasing potassium intake will remove excess sodium and eliminate the potassium deficiency and resulting hair loss. High levels of sodium can damage the hair follicles and prevent the necessary nutrients from reaching the hair. In order to improve symptoms of sodium overload, one should eat foods rich in potassium to balance the sodium levels in the body.^[5] In fact, excess salt, sugar, fat and alcohol can all destroy hair follicles and cause hair loss. A positive step towards correcting excessive salt intake is to eliminate or limit the amounts of canned soups, fast foods and processed foods that you eat, as these each have high sodium content.^[6] The literal meaning of the word *Khalitya* is falling of the hair. So, *Khalitya* is a disease in which the fall of hair occurs in various forms i.e. the hair either fallout completely or incompletely but pre-maturely.^[7]

Acharya Charaka has mentioned few major factors like, *Lavana Rasa Atisevana*,^[8] *Kshara Atisevana*,^[9] *Ushara Bhomi*^[10] which leads to *Khalitya*.

OBJECTIVES OF THE STUDY

1. To review the literatures on *Trini Dravyani Na Atiupayunjita*, on *Lavana*, *Pippali*, *Kshara* on disease *Khalitya*.
2. To evaluate the effect of *Atisevana* of *Lavana* as a causative factor for *Khalitya*.

MATERIALS AND METHODS

Source of data

Literary Source of data

All sorts of references were collected and compiled from Ayurvedic classics and available commentaries on Samhita, scientific papers, journals and modern texts etc.

Clinical Source of data

For the present study 100 patients of *Khalitya* irrespective of gender, under the age group of 16-40 were selected from OPD and IPD of S.D.M Ayurveda Hospital, Udupi.

Method of collection of data

Patients of *Khalitya* of either gender between the age group of 16-40 years were selected by purposive sampling method for this study as per inclusion and exclusion criteria. History about excessive intake of salt in their diet was collected by framing a questionnaire for this study so to assess whether excessive intake of salt is a causative factor for *Khalitya*.

Inclusion criteria

- Patients of *Khalitya* with the age group Of 16-40 years irrespective of gender.

Exclusion criteria

- Patients with the age group below 16 years and above 40 years.
- Patients suffering from any chronic disorders (more than one year), endocrine disorders and

cancer patients who have undergone chemotherapy.

- Hereditary factor

Questionnaire

Standard questionnaire was used for this study to assess whether excessive intake of salt is a causative factor for *Khalitya* by collecting the history about excessive intake of salt in their diet. Questionnaire was given to 100 patients of *Khalitya* irrespective of gender, under the age group of 16-40 who were selected from OPD and IPD of S.D.M Ayurveda Hospital, Udupi. After collection of data the response was analysed with suitable statistical method.

Assessment criteria

- Whether extra salt is needed for prepared food, if yes what is the frequency and about how much quantity per week.
- Whether they have the habit of taking salted food items, if yes how frequently they are taking per week.

OBSERVATION AND RESULTS

Chi square test was performed to see the status of occupation. On considering the nature of occupation, it was found that maximumi.e. 52 % patients were students. It showed positive correlation with *Khalitya* at p value 0.01. Chi square test was performed to see the status Diet. Majority of 51% volunteers were having mixed dietary habit. It did not show any correlation with *Khalitya*. Chi square test was performed to see the status of *Sharira Prakriti*. Majority of 29% of patients were having *Vatapitta Prakruti* and 21% were having *Kaphapitta Prakruti*. *Prakruti* has showed negative correlation with *Khalitya* at p value 0.001.

Chi square test was performed to see the status of Addition of salt/week. Majority of 63% of patients were having habit of adding salt one to two times per week. It Chi square test was performed to see the status of Addition of quantity of salt per week. It was

observed from the above mentioned data that about 69 % of patients were consuming salt in between ½ to 1 tsp. (approx. 5 g) It showed positive correlation with *Khalitya* with p value 0.04. Chi square test was performed to see the status of patients of *Khalitya* consuming Salted chips/week. Out of 100 patients 63 % of patients were eating chips one to two times in a week. It showed positive correlation with *Khalitya* at p value 0.05. Chi square test was performed to see the status of patients of *Khalitya* consuming Salted biscuits/week. It is evident from the table that maximum patients i.e. 53% were eating salted biscuits 1-2 times in a week. It showed positive correlation with *Khalitya* at p value 0.05. Chi square test was performed to see the status of patients of *Khalitya* consuming Pickle/week. Majority of patient's i.e. 43% were eating pickle more than four times per week. This showed positive correlation with *Khalitya* with p value 0.04. Chi square test was performed to see the status of patients of *Khalitya* consuming Fried food/week. Majority of patients were consuming fried food 1-2 times per week. It did not show any positive correlation with *Khalitya* at p value >0.05. Chi square test was performed to see the status of patients of *Khalitya* consuming Salted groundnuts/week. Majority of patient's i.e. 57% were not taking salted groundnuts. (Table no. 19) It did not show any positive correlation with *Khalitya* at p value >0.05. Chi square test was performed to see the status of patients of *Khalitya* consuming Non vegetarian food /week. Majority of patients were not consuming non vegetarian food per week. It did not show any positive correlation with *Khalitya* at p value >0.05. Chi square test was performed to see the status of patients of *Khalitya* consuming Processed food/week. Majority of 47% of patients were having habit of consuming processed food 1-2 times per week. It did not show any positive correlation with *Khalitya* at p value >0.05. Chi square test was performed to see the status of patients of *Khalitya* Fruits adding salt/week consuming. Majority of patients were not consuming fruits adding salt food per week i.e. 58%. (Table no. 22) It did not show any positive correlation with *Khalitya* at p value >0.05.

RESULTS

Variable	Mean	SD	Correlation	Remarks	Chi Square	Remarks	Contingency coefficient
Marital status	1.64	0.482	-0.348** p=.000	HS	0.000	HS	0.001
Gender	1.73	0.446	-.323** p=.000	HS	0.031	S	0.439
Desha	1.66	0.670	-.271** p=.006	HS	0.016	S	0.016
Religion	1.18	0.458	0.051 p>0.05	NS	0.439	NS	0.439
Diet	1.51	0.502	-.134 p>0.05	Ns	0.135	NS	0.179
Occupation	2.00	1.72	.414** p=.001	HS	0.000	HS	0.001
Prakruti	3.04	1.775	-.330** p>0.05	HS	0.021	S	0.021
Habits	2.98	0.202	-.022 p>0.05	NS	0.776	NS	0.589
Addition of salt	1.33	0.652	.402** p=.001	HS	0.071	S	0.179
Quantity of salt	2.58	0.923	.314** p=.001	HS	0.028	S	0.277
Salted chips	2.02	0.670	.235* p=0.05	S	0.073	S	0.073
Processed food	1.62	0.648	-.013 p>0.05	NS	0.830	NS	0.830
Salted biscuits	1.89	0.764	.304** p=.05	HS	0.011	HS	0.011
Salted groundnuts	1.51	0.689	.043 p>0.05	Ns	0.897	NS	0.897

Fried food	2.33	1.18	-.036 p>0.05	NS	0.050	HS	0.050
Non vegetari an food	1.99	1.243	.249* p>0.05	S	0.037	S	0.037
Fruits adding salt	1.48	0.643	.323** p>0.05	HS	0.006	HS	0.334
Pickle	3.04	0.974	.323**p =0.04	HS	0.229	NS	0.188

DISCUSSION

Trinidravayani Na Atiupayunjita, this concept is explained in *Rasavimanadhyaya* of *Vimanasthana*, so that it provides platform for the study. Here it is tried to compile Charaka's view on *Gun*s of three *Dravyas*, *Pippali*, *Kshara* and *Lavana* and thier effect when taken in excess, and *Lavana* as a *Nidana* for *Khalitya*. Through centuries food has been recognized as important for human being, both in health and diseased state. So the description in classics is not only emphasized on *Ahara* but also entire quality of it. According to *Acharya Charaka*, maintenance of health and *Nidana* of all types of diseases are dependent on *Ahara*, *Matra*, *Desha*, *Kala*, etc. So *Ahara Dravyas* which when consumed in proper quantity in specified duration does not cause any harm. But few *Ahara Dravyas* when consumed in excess for longer duration will lead to different disorders. “*Trini Dravyani*” is indicative of only *Pippali*, *Kshara* and *Lavana*. There are other *Dravyas* belonging to the same category like *Chitraka*, *Bhallataka*, etc. but only these three has been told, the reason is to elicit the most dangerous effects and these three *Dravyas* are used as food ingredients in routine diet. Here it is necessary to discuss on the word *Ati Upayunjita*. There is no specific explanation available for the term *Ati Upayunjita*. However, “*Ati*” can be taken in two ways i.e. in excess *Matra* and continuous or frequent use for longer duration. What time period should be considered for longer duration has not been clarified by the *Acharyas*. But the duration and ill effects which are mentioned by the *Acharyas* when these *Dravyas*

are used in excess and for longer duration may vary from one individual to another depending on their *Prakruti*, *Satwa*, *Satmya*, *Vaya*, *Bala*, etc. factors to produce the adverse effects on their body. So the *Acharyas* might have not mentioned the time period / duration for continuous usage of these three *Ahara Dravyas* i.e. *Pippali*, *Kshara* and *Lavana*.

Discussion on Lavana

According to all texts of *Brihatrayee* the genesis of different *Rasa* are same but there is a difference of opinion about the composition of *Mahabhutas* in *Lavana Rasa*. *Acharya Charaka*, *Vagbhata* and *Nagarjuna* opine that *Lavana Rasa* is originated from *Jala* and *Agni*, Where as *Sushrutha* has the opinion that it is from *Pruthvi* and *Agni*. It becomes the point of discussion why there is difference of opinion in the composition. But on exploring the properties of *Lavana Rasa* it is seen that *Lavana Rasa* is *Snigdha*, *Ushna* and *Guru*. Which is supporting both the views like *Jala Mahabhuta* is predominantly *Snigdha*, *Agni Mahabhuta* is *Ushna* where as *Pruthvi Mahabhuta* is predominant of *Guru Guna*.

Lavana is not only an essential diet of humans but also it is required for animals and some plants. All need *Lavana* for survival. Many *Ahara Dravyas* have been mentioned like *Pippali*, *Kshara*, *Maricha*, *Shunthi*, etc. as adjuvants of food but only *Lavana* has the special property of giving taste to food. One more special property of *Lavana* is it is *Sarvarasa Pratyanka*, that is when added with other tastes in excess quantity it nullifies the taste of other *Rasas*. We get the references about different types of *Lavana* in different classics. *Pancha Lavan*s are told. Among them *Saindhava Lavana* is most useful both for medicinal purpose and for consumption among all varieties of Salt, but *Sauvarchala Lavana* is listed first because of its most agreeable taste. But *Souvarchala Lavana* comes only after *Saindhava* in order of priority.

Among five salts, *Saindhava* is said to be wholesome for human beings. Because it is considered as the pure variety of salt as it is having *Laghu* and *Snigdha Guna* and *Shita Veerya* it does not produce any harmful

effect as it is *Tridosahara*. Because of these qualities only it acts as *Vrushya*.

It is told that *Lavana* should not be used in excess for longer duration, if excessively used it produces *Glaani*, *Shithilatha*, *Dourbalya* etc. The reason for all these might be due to its *Ushna* and *Teekshna Guna*. When *Lavana* is taken in excess it leads to *Pitta Vruddhi* due to its *Ushna Guna* leading to *Shithilata* and *Glaani*. It is said that not only when taken in excess quantity it shows its effects but also on *Bhumi Desha* where the soil is predominant of *Lavana Rasa* it shows its effect. Because of *Ushna* and *Tikshna Guna* it inhibits the proper growth of plants. By seeing this, same effect can be predicted in human beings also.

It is said as *Aapaatabhadra*, as they are capable of producing good as well as bad effects. But people unaware of this are using salted food items just because their tongue is demanding. Even though people are accustomed for using *Lavana* in excess quantity, they also suffer from diseases which are untimely *Khalitya*, *Vali* and *Palitya*.

Salt, also known as table salt or rock salt (halite), is a crystalline mineral that is composed primarily of sodium chloride (NaCl), a chemical compound belonging to the larger class of ionic salts. It is absolutely essential for animal life, but can be harmful to animals and plants in excess.

Salt is essential for the human body to function. It plays a role in muscle contraction, protein digestion and nerve communication. But too much salt can interfere with the normal functioning of the body, contributing to the development of detrimental conditions. "Mayo Clinic Women's health Source" reports that about 80 percent of consumed salt comes from processed foods and meals served at restaurants. Salt preserve foods such as meats and canned vegetables and adds flavor. The other 20 percent comes from table salt and naturally occurring sources like milk, beans and some vegetables.

Discussion on *Khalitya*

In *Samhitas* we get the description of *Khalitya* but for the first time *Vagbhata* differentiated *Indralupta* and

Khalitya, then *Kartikacharya* in *Madhukosha* commentary gave the differentiation between *Indralupta*, *Khalitya* and *Ruhy*.

The etiological factors like *Atilavan Sevana*, *Atikshara Sevana*, *Viruddha Ahara*, *Atapa Sevana* etc. are responsible for *Khalitya*. In the *Samprapti* the *Agnimandhya*, *Srotorodha*, *Pitta*, *Vata* and *Kaphaprakopa* are important factors. Gradual Hair Loss is a cardinal symptom of *Khalitya*.

On the basis this symptom *Khalitya* should be differentiated from other diseases like *Indralupta*, *Ruhy*. *Acharya Charaka* was the pioneer in describing the principles of treatment of *Khalitya*, which are *Nasya*, *Abhyanga*, *Lepa* and *Shodhana*.

As the study is focused on *Lavana*, when taken in excess leads to *Khalitya* it is important to discuss the role of *Lavana* in causing *Khalitya*. Too much use of *Lavana* results in *Pittavridhi* due to its *Ushna* and *Teekshna Guna*. Here *Pitta* can be taken as *Dehoshma* and *Pitta Dosh*. This reaches the scalp and burns *Keshabhoomi* which leads to hair fall.

The effect of salt consumption on long term includes health problems like stroke and cardiovascular disease, high blood pressure, left ventricular hypertrophy, edema and carcinoma of gastrum.

High levels of sodium can damage the hair follicles and prevent the necessary nutrients from reaching hair which leads to hair fall. In order to correct symptoms of sodium overload, one should eat foods rich in potassium to balance the sodium levels in body.

Too much salt in the diet can slow hair growth and increase hair loss. Poor nutrition can adversely affect the health of hair. Dietary deficiencies deprive hair follicles of essential nutrients. Poor diet combined with stress can lead to hair loss. In fact, excess salt, sugar, fat and alcohol can all destroy hair follicles and cause hair loss. A positive step toward correcting excessive salt intake is to eliminate or limit the amounts of canned soups, fast foods and processed foods, as these each have high sodium content.

CONCLUSION

As Lavana is having *Ushna* and *Teekshna Guna* it aggravates *Pitta* which scorches the scalp leading to *Khalitya*. Present study has shown that major group of patients has showed affinity towards salt and consuming it from quite long time in one or the other way. The results showed significance of salt having an impact of causing *Khalitya*. Salt is a crystalline mineral that is composed primarily of sodium chloride (NaCl). High levels of sodium can damage the hair follicles and prevent the necessary nutrients from reaching hair which results in hair fall. Too much salt in the diet can slow hair growth and increase hair loss. A positive step towards correcting excessive salt intake is to eliminate or limit the amounts of canned soups, fast foods and processed foods as each have high sodium content. But now days due to fast life people are having mental stress, which might be a factor that adds on for hair fall. Shampoos are used for hair wash rather than soap and medicated drugs. Sodium chloride better known as table salt is used as a thickener in shampoos this may also cause hair loss.

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