OBSERVATIONAL SURVEY STUDY OF RASA-ATIYOGA

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Abstract- This human body is maintained for lifetime by proper intake of proper food.
So for perfect Chikitsa, it is very important to know the main Rasa of each and every Aahardravya to define its exact action on specific Dosha. This relation between Rasa and Dosha is termed as Rasa-Dosha Sambandha or Rasa-Dosha correlation. Correlation is a relationship in which one thing affects or depends on another. For proper treatment one should know the exact relation between Dosha and Rasa whether favorable or unfavorable.
Cohort Retrospective study is analytical (observational) study which is usually undertaken to obtain additional evidence to refute or support the existence of an association between suspected cause and disease. The purpose of this Retrospective study was to correlate or to find any relation between Atiyoga of each Rasa and various Lakshana of specific Dosha if any found in Volenteers taken for this study.

Key words- Rasa-Dosha relation, Atiyoga, Retrospective observational study

INTRODUCTION
The human body is maintained for lifetime by proper intake of proper food. Though this food exists outside the human body, but according to Panchabhatutika theory it is also made up of Panchamahabhoota. (1) Aahara maintains Prana in the body which is responsible for life. Both are Panchabhatutika in nature and exert effect on each other. (2)
This Aahara sustains or maintains human body by its different attributes or Rasapanchaka. (3) Rasa of specific Aahardravya is more important in this process. The balance of six Rasa should be maintained for well being. (4) It is termed as Samyakyoga. Improper consumption of any Aahardravya having specific Rasa exerts either Ati/ Mithya or Heenayoga of that specific Rasa which results inbalance of Dosha. Being Panchabhatutika in origin, this Aahaara has direct action on Panchabhatutika components of the human body like
Dosha-Dhatu-Mala according to Samanya-Vishesha theory.

So for perfect Chikitsa, it is very important to know the main Rasa of each and every Aahardravya to define its exact action on specific Dosha as these are related to each other. Without the clear knowledge about this interrelation between Rasa and Dosha one is not able to diagnose as well as treat the patient. Each patient has individual characters and should be diagnosed and be treated individually. Two patients of the same diagnosis may not be treated by same medicine. Many other factors like Dooshya-Desha-Bala-Kala-Anala-Prakruti-Vaya-Sattwa-Satmya-Aahara-Avastha are also contributing.(5) So for proper treatment one should know the exact relation between Dosha and Rasa whether favorable or unfavorable.

A special Retrospective survey study had been done to support this literary study concept.

Cohort Retrospective study is analytical (observational) study which is usually undertaken to obtain additional evidence to refute or support the existence of an association between suspected cause and disease. In epidemiology, the term ‘Cohort’ is defined as a group people who share a common characteristic or experience within a defined time period (e.g. age, occupation, exposure to a drug or vaccine, pregnancy etc.) The comparison group may be the general population from which the cohort is drawn ,or it may be another cohort of persons thought to have had little or no exposure to the substance in question, but otherwise similar.

The distinguishing features of Cohort studies are 1-the cohorts are identified prior to the appearance of the disease under investigations 2.the study groups, so defined, are observed over a period of time to determine the frequency of disease among them 3.The study proceeds forward from cause to effect. These criterias are used to design the retrospective observational survey study to support the study of Rasa-Dosha correlation.

The purpose of this Retrospective study was to correlate or to find any relation between Atiyoga of each Rasa and various Lakshana of specific Dosha if any found in Volenteers taken for this study. Aahara is composed of Shadrasa. It has been mentioned as one of the ‘Vyapaka Hetu’ of all
Vyadhi. So efforts have been made to see any correlation of Shadrasatmaka Aahara and Dosha Lakshana with the help of this study.

It is also needed to prove this concept of relation between Rasa and Dosha with the help of survey study. This was the rationale behind selection of this topic.

So study was done with the hypothesis - Two variables are associated (i.e dependent) i.e Rasasevana and Doshalakshana are associated.

Materials-
1000 Volunteers of age between 08 to 75

Methodology of Retrospective Study-
Charaka Samhita has been taken as main or centralized idea for the discussion chapter in this Thesis. So Atiyoga Rasalakshana described in Charaka Sootrasthana Adhyay 26 was used to draw this special case paper.

- 1000 Volunteers of age between 08 to 75 and of either sex with their consent were selected randomly for this survey. Since the age group under study was very large; to minimize the errors large sample size was selected. According to statistics if 1% error is accepted then minimum sample size required was 990. Hence 1000 Volunteers were selected.
- A detailed history of Aahara-Dravyatah (Bhat, Poli, Bread, Bhaji), Gunatah, (Gurva di), Rasatah (Any) of each patient was taken. This history was taken for minimum 1 month. Aahara shows its effect Hita or Ahita on Shukradhatu after the period of minimum 1 month. So history of Aahara for minimum 1 month was taken. In the case of aged Volenteers (Above 70 yrs) efforts were taken to observe history of Aahara by asking their close relatives also wherever needed.
- Annakala or the time for meal is different for each person. Generally each person takes breakfast in the morning, lunch in the afternoon and dinner at night. Thus three Annakala are common. But this time may differ from person to person. Annakala of persons doing daily night duties is totally different. While taking the case of each volunteer for the survey the history of Aaharadravya with reference to these main 3 Annakala was observed. Thus observations about minimum 90 Annakala of each volunteer in a month were recorded. Observation about consumption of
snacks other than these 3 main Annakala was also recorded to check the effects of specific Rasasevana.

- If any Volunteer showed minimum 75% Lakshana of Atiyoga mentioned in Samhita, it was considered as Atiyoga of specific Rasa. e.g. Total 25 Atiyoga Lakshana of Madhura rasa are mentioned in Samhita. If Volunteer showed minimum 18 Lakshana, it was termed as Atiyoga of Madhura rasa. The same method was applied for other Rasa also.

- Approach of Ayurveda to examine any person whether Swastha or Aatura is individual. Aahara consists of many types of foods having combination of many Rasa. So to observe the history of Aahara in each person is quite different as well as difficult. So emphasis was given to observe Atiyoga Lakshana of specific Rasa mentioned in Charaka Samhita Su.26 which was present in Volunteers at the time of case taking. If a volunteer consumes specific Rasa for at least 60 Annakala or more than that in a month and if showing any Lakshana of specific Rasa then it was named as ‘Atiyoga’.

- Lakshana of Atiyoga of Rasa mentioned in Charaka Su.26 were written in a tabular form in the casepaper. The grade of 0 and 1 were used to observe these Lakshana. 0 means –Lakshana not present at the time of case taking. 1 means-Lakshana present at the time of case taking.

- Hina and Mityyayoga are not mentioned clearly. It is advised to see these Yoga by different Lakshana. These all Yoga are interrelated. Person having Lakshana of Madhura Atiyoga may show different Lakshana of Vatakshaya. But it is quite difficult to check these Lakshana as Samprapti is Dwidoshaja or Tridoshaja. Estimation of Mityyayoga is also difficult. So in this Retrospective survey study present Atiyoga Lakshana in Volunteers and their history of Aahara of certain Rasa was observed mainly. Many Lakshana of Atiyoga of each Rasa are mentioned in Samhita. All Lakshana are not found in survey. Similar Lakshana has also been mentioned for different Rasa. In that case history of specific Rasa was applied for that Lakshana.

- Assessment of various Atiyoga Lakshana-
  1. Sthoulya were assessed with the help of Height-Weight chart and all who were showing various Lakshana
of Sthoulya mentioned in Charaka were considered as Sthula.

2. Aalasya, Atiswapna, Gaurava, Anannabhilasha etc were subjective criteria. So the grade of 0 and 1 were used to observe these Lakshana.

3. Enlargement of Tonsils was observed to assess Mansabhivruddhi.

4. History of episodes of Shwasa-Kasa and Pratisshaya were asked to Volunteens.

5. Upalepa was assessed by examining coating on Tongue.

6. Dantaharsha was subjective.

7. Trushna was checked by asking about increased frequency of drinking water.

8. Kaphanishivana was assessed by asking excessive secretion from mouth or Lalastrava.

9. Raktadooshana and Pittakopa was assessed by asking the history of Lakshana of Raktadushti like Vidradhi, Pitika, Mukhapaka.

10. History of Mukhashotha or Padashotha was asked to assess Shwayathu.

11. Khalitya and Palitya were assessed by subjective criteria.

12. Amlapitta and Vicharchika were assessed by Textual parameters.

13. Sadana-Kanthadaha, Aasyashosha, Bheda were also subjective.

14. Karshana was assessed by the history of reduction in weight.

- With the help of observed data the relation between Rasa of Aahara and Lakshana of Dosha if any were observed by using Chi-square test of Independence.

### OBSERVATIONS and RESULTS

**Age wise distribution of 1000 Volunteers**

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-15</td>
<td>193</td>
</tr>
<tr>
<td>15-30</td>
<td>601</td>
</tr>
<tr>
<td>30-45</td>
<td>143</td>
</tr>
<tr>
<td>45-60</td>
<td>29</td>
</tr>
<tr>
<td>60-75</td>
<td>34</td>
</tr>
</tbody>
</table>

**Sexwise distribution of 1000 Volunteers**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Fe</td>
<td></td>
</tr>
</tbody>
</table>
**Observational Survey Study of Rasa-Atiyoga**

**Gender Distribution of 1000 Volunteers**

- Female: 524
- Male: 476

**Prakruti Distribution of 1000 Volunteers**

<table>
<thead>
<tr>
<th>Prakruti</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KP</td>
<td>270</td>
</tr>
<tr>
<td>KV</td>
<td>117</td>
</tr>
<tr>
<td>PK</td>
<td>191</td>
</tr>
<tr>
<td>PV</td>
<td>112</td>
</tr>
<tr>
<td>VK</td>
<td>143</td>
</tr>
<tr>
<td>VP</td>
<td>167</td>
</tr>
</tbody>
</table>

**Rasa Atiyoga Distribution**

- MAL: 48%
- MTK: 27%
- KTK: 25%

**Doshaprakopwise Distribution of 1000 Volunteers**

<table>
<thead>
<tr>
<th>Dosha</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>354</td>
</tr>
<tr>
<td>P</td>
<td>316</td>
</tr>
<tr>
<td>V</td>
<td>330</td>
</tr>
</tbody>
</table>

**Graph of % of Volunteers in Madhur Atiyoga Lakshana**

- Percentage: 60, 64, 66, 68
- Percentage: 58, 62, 64

**Graph of % of Volunteers in Amla Atiyoga Lakshana**

- Percentage: 40, 45, 47.5, 51.3

**Lakshana**

Classification of Rasa and Dosh Lakshana observed in volunteers

<table>
<thead>
<tr>
<th>Classification</th>
<th>MAL</th>
<th>MTK</th>
<th>KTK</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>138</td>
<td>89</td>
<td>103</td>
</tr>
<tr>
<td>P</td>
<td>151</td>
<td>79</td>
<td>86</td>
</tr>
<tr>
<td>K</td>
<td>197</td>
<td>98</td>
<td>59</td>
</tr>
</tbody>
</table>

Contingency Table

Graph of % of volunteers in Lavan Atiyoga lakshana

Graph of % of volunteers in Kashaya Atiyoga lakshana

Graph of % of volunteers in Katu...

Graph of % of volunteers in Tikta Atiyoga lakshana
STATISTICAL ANALYSIS

Contingency Table

<table>
<thead>
<tr>
<th>Dosha</th>
<th>MAL</th>
<th>MTK</th>
<th>KTK</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>138</td>
<td>89</td>
<td>103</td>
<td>330</td>
</tr>
<tr>
<td>P</td>
<td>151</td>
<td>79</td>
<td>86</td>
<td>316</td>
</tr>
<tr>
<td>K</td>
<td>197</td>
<td>98</td>
<td>59</td>
<td>354</td>
</tr>
<tr>
<td>Total</td>
<td>486</td>
<td>266</td>
<td>248</td>
<td>1000</td>
</tr>
</tbody>
</table>

Rasasevana either Madhura-Amla-Lavana (MAL) or Madhura-Tikta-Kashaya (MTK) or Katu-Tikta-Kashaya (KTK) is observed in each patient but which makes things difficult as each patient comes in each group of MAL/MTK/KTK. But to check the concept only Atisevana is considered as leading factor. After creating such data, Chi square test of Association is applied to test the hypothesis that-

H-Two variables are not associated (i.e independent) i.e Rasasevana and Doshalakshana is independent. Versus-

H1-Two variables are associated (i.e dependent) i.e Rasasevana and Doshalakshana are associated.

Chi square calculated = 22.90, Chi square table = 13.27, P value = 0.0001325, d.f. = 4

Since P value is less than 0.01, we are accepting H1. Hence we can conclude that Rasa Atisevana have significant effect on Doshalakshana observed.

DISCUSSION-

A special case paper for the Retrospective survey study had been prepared to support this literary study of ‘Rasa-Dosha relation’. Out of 1000 Volenteers maximum Volenteers were found in the age group of 15-30 while minimum Volenteers were from the age group of 60-75. Female Volenteers are more (524) than Male Volenteers (476).

Kaphapitta Prakruti Volenteers were maximum (270) while Pittavata Prakruti were minimum (112). 486 Volenteers consumed Aahara of Madhura-Amla-Lavana rasa. 266 consumed Aahara of Madhura-Tikta-Kashaya while 248 Volenteers consumed Aahara of Katu-Tikta-Kashaya mainly.

Out of 1000 Volenteers, 354 showed Atiyoga Lakshana related to Kaphaprokopa mainly. 316 Volenteers showed Atiyoga Lakshana related to Pitta while 330 showed Atiyoga Lakshana related to Vata mainly.
After analyzing the data of all Volunteers it was observed that Atiyoga Lakshana of mainly Madhura and Amla-Lavna Rasa were found. It is also observed that these Volunteers were consuming Aahara of this Rasa mainly. Lakshana of Samayoga and Hinayoga were not found significantly. Discussion of main observed Lakshana has been done.

1. **Madhurarasa** - Main Aaharadravya observed are Dugdhavikruti like Paneer, Khava, Bengali Mithai, Milkshakes, Chocolates, Sabudana, Fruitsalad, Icecream, Udid dal. Volunteers with these causative factors show some Lakshana of Madhurarasa Atiyoga as well as Kaphaprapkopa.

2. **Sthoulya** - Overweight Volunteers according to the Height-Weight chart and all who were showing various Lakshana of Sthoulya mentioned in Charaka were considered as Sthula. 64.6% Volunteers were found Sthula. They mainly showed higher consumption of Sabudana, Potato, and South Indian food like Uttapa or Masala dosa mainly. It is a Lakshana of Kaphaprapkopa.

3. **Atiswapna** - It is also a subjective criteria and one of the Lakshana of Kapha. Volunteers were asked for the need for excessive sleep irrespective of sleep for normal period. 61.5% Volunteers showed excessive consumption of Dugdhavikruti which is Guru in nature.

4. **Gaurava** - Feeling of heaviness is named as Gaurava. It is a subjective Lakshana. 61% Volunteers showed history of Cheese, Pizza, Milkshakes.

5. **Anannabhilasha** - 63.6% Volunteers having the consumption of Dugdhavikruti like Paneer or Kilata showed this Lakshana mainly. Kilata is Guru, Brunhana and Kaphakara in nature. In excess it creates Mandagni which leads to Anannabhilasha.

6. **Mansabhivruddhi** - Abnormal growth of Mansadhatu at various places is named as Mansabhivruddhi. 62.6% Volunteers showed Gilayuvruddhi mainly. Excessive consumption of Paneer as well as fruits like banana, fruitsalad and milkshakes was observed in these Volunteers mainly.
7. **Shwasa-Kaphapradhana**

Tamakashwasa was observed in 62.7% Volunteers consuming Milkshakes or Icecreams and Dosa.

8. **Kasa** -Kaphapradhana Kasa was found in Volunteers who were consuming Madhurarasa Dravya like Jam or Jelly. 63.4% Volunteers also showed this Lakshana.

9. **Pratishyaya**-66.5% Volunteers showed recurrent history of Pratishyaya. It is found in the Volunteers at the age of 10 to 12 years mainly. This age comes under the dominance of Kaphadosha. History of Madhura Atisevana like Bengali Mithai, Cold drinks, Chocolates was found in these Volunteers.

10. **Upalepa**-65.9% Volunteers showed Upalepa of Jivha mainly. It is due to excessive intake of Madhura Aahara having Guruguna like Kilata.

2. **Amlarasa**

Main Aaharadravya observed are- Pickles, Dadhi, Tomato, Methi, Cold drinks.

1. **Dantaharsha**-51.3% Volunteers showed this Lakshana consuming excessive amount of Pickles mainly. Volunteers also showed excessive intake of aerated colddrinks which contains acids. Vishadaguna of Amlarasa in excess is a causative factor for this Lakshana.

2. **Trusha**-This Lakshana has also been mentioned in Atiyoga of Lavana, Tikta and Kashaya rasa. But 45% Volunteers showed the history of Amlarasa like Tomato, Sauce as well as bakery products mainly. Many bakery products are made up of Maida (Samita) which is Gurugunatmaka. These products are made up by fermentation. So Amlarasa and Guruguna of these products may lead to Pittakopa and Trusha.

3. **Kaphvilapana**- It is related to different excessive secretions due to Kaphadosha. According to references this Lakshana is due to Atiyoga of Amlarasa and Lavana. 44.5% Volunteers having the history of excessive intake of Pickles and Nimbuka showed post nasal discharge mainly. Ushnaguna of Amlarasa might be responsible for this discharge.

4. **Raktadooshana**- 47.5% Volunteers consuming bakery products, Chinese food showed different Lakshana of Raktadushti like Vidradhi, Pitika, Mukhapaka which are mainly related to Pitta. Chinese food is prepared with the help of different sauces and salts like soya
sauce which are Amla and Kshara in nature. Both are Raktaprakopaka when consumed in excess. Intake of Methi is also found in some Volunteers.

5. **Shwayathu** - 48.4% Volunteers showed the tendency of Mukhashotha or Padashotha having the history of Methika, Pickels.

3. **Lavanarasa**
   1. **Trusha** - 47.8% Volunteers consuming snacks like Vadapav, Pickles as well as Chinese food showed this Lakshana mainky. All these foods contain Lavanarasa.
   2. **Pittakopa** - 49.5% Volunteers having excessive consumption of these foods as well as Potato Wafers containing added salt showed some Lakshana of Pittakopa like Swedadhikya. It is due to Ushnaguna of Lavana.
   3. **Tapa** - 46.3% Volunteers consuming Chinese food especially Soups showed ‘Tapa’ i.e feeling of rise in temperature without having fever. It is due to Ushnaguna of Lavanarasa.

4. **Palitya** - 46% Volunteers at the age of 19 to 35 mainly showed this Lakshana who were consuming Wafers, Kurkure, Pickles in excess. Excessive Lavanarasa vitiates Pitta and Romakoopa which leads to either Palitya or Khalita.

5. **Khalita** - 44% Volunteers consuming bakery products as well as Cheese mainly showed this Lakshana. These foods are Lavana-Amla and Pittakara.

6. **Amlapitta** - It is the main Lakshana observed in 50% Volunteers consuming Amla, Lavana as well as Madhurarasa in excess. Amla and Lavanarasa are responsible for Pittapradhana Agnidushti directly which leads to Amlapitta. Madhurarasa in excess makes Agnimandya which also can lead to Amlapitta. Many other causative factors are also responsible for Amlapitta, but food like Chinese, bakery products, cold drinks as well as non-vegetarian like chicken and mutton having these Rasa mainly is observed in this survey.

7. **Vicharchika** - It is found in 45.3% Volunteers consuming Pickles as well as added salt. Many volunteers showed Sravi Vicharchika. It is due to excessive use of Lavana and Amlarasa also.

4. **Katurasa**
   1. **Sadana** - The feeling of tiredness is named as ‘Sadana’. 23.7% Volunteers consuming food containing Green
pepper as well as spices showed this *Lakshana* mainly. It is due to *Aagneya* nature of *Katurasa*. Vitiated Vata is also responsible for it.

2. **Shariratapa** - It has been mentioned in *Atiyoga* of *Lavanarasas* also. It is a feeling of rise in body temperature. *Aagneya* nature of *Katurasa* is responsible for it. 46.7% Volunteers consuming Garama Masala and spicy non vegetarian food as well as Capsicum showed this *Lakshana* mainly.

3. **Kanthadaha** - *Kanthadaha* was observed in 22.5% Volunteers showing history of excessive consumption of Green peeper, food containing Garam Masala. It is due to *Pittakopa*.

4. **Bheda** - 23.4% Volunteers ‘Bheda’ type pain at different *Asthi* like Tibula. They were consuming Spices like Garama Masala. Vitiated Vata due to excessive *Katurasa* is a causative factor.

5. **Tiktarasa** - Main *Aaharadravya* were Karvellak, Palaka.
   1. **Aasyashosha** - 46.9% Volunteers consuming Karavellak as well as Palaka showed this *Lakshana*. *Rukshaguna* and *Tiktarasa* are causative factors.
   2. **Balakshaya** - 46.7% Volunteers showed the feeling of Fatigue or *Balakshaya* who were consuming *Patrashakas* like Palaka, Methika beeja.
   6. **Kashayarasa** - Main *Aaharadravya* were Supari, Mataki.
   1. **Aasyashosha** - 48.1% Volunteers consuming *Poogas* or Supari after meal show this *Lakshana*. It is due to *Rukshaguna* of *Kashayarasa* as well as Vata.
   2. **Karshana** - 47% Volunteers showed reduction in weight since 6 months who were consuming Mataki, Chavali. These are *Shimbhidhanya* having *Kashayarasa* and *Vatala*.

3. **Udaradhmana** and 4. **Vishtambha** *Lakshana* were not significant though they were observed.

**CONCLUSION**

Two variables are associated (i.e dependent) i.e *Rasasevana* and *Doshalakshana* are associated. *Rasa Atisevana* causes *Doshaprakopa*. This Association is found statistically significant as the P value is less than 0.01.

**REFERENCES**

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Research Article


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