

CASE CONTROL OBSERVATIONAL STUDY OF SAAM JIVHA AS A LAKSHAN IN ANNAVAHASROTODUSHTI W.S.R. TO SALIVA PH TEST

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ABSTRACT

Annavasrotas is one of the important *srotas* in respect of all *srotas*. *Annavahasrotas* is performing the main function in our body i.e. digestion. The causative factors of *annavahasrotodushti* are untimely food consumption, consumption of food in excess quantity, consumption of improper food, disturbance in functioning of *jatharagni*. Thus, because of above causative factors there is abnormal functioning of *jatharagni*- '*Agnimandya*'. So the food which is consumed is not digested properly & there is formation of '*Aam*' which causes *Saam Jivha*. The '*Saliva pH*' ranges from 06.4 to 06.8. So, we studied relation between the *Saam Jivha* as a *lakshan*, in *Annavahasrotodushti* and its relation with *Saliva pH*. Total 100 individuals were included in study, out of which 50 having *Annavahasrotodushti* with *Saam Jivha* and 50 normal healthy individuals were selected and at last *saliva pH* was done. The individuals who were having chronic *Annavahasrotodushti* with *Saam Jivha* such individuals *pH saliva* were acidic in nature.

Keywords: *Annavahasrotodushti Lakshans, Agnimandya, Saam Jivha, pH Saliva, pH Meter*

INTRODUCTION

Considering the study of *Strotas*, *Annavasrotas* is one of the important *srotas* in respect of all *srotas*. *Annavahasrotas* is performing the main function in our body i.e. digestion. The causative factors of *annavahasrotodushti* are untimely food consumption, consumption of food in excess quantity, consumption of improper food, disturbance in functioning of *jatharagni* (1).

Thus, because of above causative factors there is abnormal functioning of *jatharagni*- '*Agnimandya*'. So the food which is consumed is not digested properly & there is formation of '*Aam*' (2). Production of *Aam* which started inside the alimentary tract gradually invades the *Doshas* and through them spreads to *Dhatus* and *Malas* also. In this way there is improper forma-

tion of subsequent *dhatu*s, such as *saam rasa* which flows all over the body. So, the *Saam Rasa* wherever it flows affects them & produces its *Saam lakshanas* by promoting accumulation of toxins in the body & producing the disturbance in the normal body functions. The *mala* of *Rasa dhatu* is '*Kapha*'. As one of the type of *Kapha* i.e. '*Bodhak Kapha*' which is present on *Jivha* which performs the perception & understanding of taste (3). As in '*Agnimandya*' condition there is improper digestion of food, leading to formation of '*Saam Rasa*'. So as a result, there will be disturbance in normal quantity and functioning of *Mala of Rasa dhatu* i.e. '*Kapha*'. So definitely there will be disturbance in normal functioning of '*Bodhak kapha*' which is situated on *Jivha*. In this way the '*Saam Rasa*' can lead to manifestation of '*Saam Jivha*'. So, in *samaj vikaras* and *samaj avastha* of many diseases, which is due to *Annavaahasrotas dushti* may present *Saam Jivha* as a *lakshan* i.e. thick coating on tongue, for example in conditions such as *Anannabhilasha*, *Arochaka*, *Avipaka*, *Chardi* (4). Normally the person's *Jivha* should be '*Niraam*'. *Acharya Charak* had mentioned *Prakrut Jivha*, it is having sufficient length, breadth, smooth, thin & with normal colour (5).

Annabhilashan Arochaka Avipaka Chhardicha
Drishtavannavachanyasya Srotamsipradushtaniti
Vidyat.
Cha. Vi. 05/10

There are various diagnostic tools through which examination of patient can be performed. But tongue diagnosis has its own importance. As we all know that tongue is mirror of our digestive system. Also *Acharya Yogratnakar* have mentioned '*Jivha Pariksha*' in '*Ashtavidha Pariksha*'(6). Tongue diagnosis not only indi-

cates the state of digestion but also the state of various organs & person's current health. As, we know that digestion is a complex process controlled by several factors. So, '*Saliva*' plays an important role in digestion. *Saliva* contains the enzyme *Amylase* that begins the breakdown of complex sugar, including starches, reducing them to disaccharide maltose (7). The '*Saliva pH*' ranges from 06.4 to 06.8. So, we want to study relation between the *Saam Jivha* as a *lakshan*, in *Annavaahasrotodushti* and its relation with *Saliva pH*.

MATERIALS AND METHODS:

Source of Data

1. The patient visiting to college, hospital and through camps organised by hospital in surrounding were selected for the study.
2. Study of total 100 patients was carried out after appropriate counselling with the informed consent for participation in the study,

Clinical Examination of Patient

The detailed case format designed for study, including all History, Clinical Examination and Questionnaire for assessment of Etiological Factors and Symptoms based on *Anannavaahasrotodushti* mentioned by *Acharya Charak* (as attached in Annexure).

The clinical Instruments used for study includes:-

- a. Torch
- b. Sterile Container (30 ml)
- c. Digital pH Meter
(Manufacturing Company:- HANNA Instruments)

INCLUSION CRITERIA

All clinically pre-diagnosed cases of *Annavaahasrotodushti Lakshanas*-

1. Anannabhilasha

2. Arochaka
 3. Avipaka
 4. Chardi
 and those who had *Saam Jivha* (Thick Coated Tongue) irrespective of gender and age group 15 to 50 yrs were selected

EXCLUSION CRITERIA

Having pre-diagnosed major illness which presents with *Annavahasrotodushti Lakshanas* due to infective diseases, HIV-AIDS and Cancer were excluded.

ASSESSMENT CRITERIA:

Samprapati of Saam Jivha:

The mala of Rasa dhatu is ‘Kapha’. As one of the type of Kapha i.e. ‘Bodhak Kapha’ which is present on Jivha (Tongue) which performs the perception & understanding of taste.



As in ‘Agnimandya’ condition there is improper digestion of food, leading to formation of ‘Saam Rasa’.
 So as a result, there will be disturbance in normal quantity and functioning of Mala of Rasa dhatu i.e. ‘Kapha’.
 So definitely there will be disturbance in normal functioning of ‘Bodhak kapha’ which is situated on Jivha.
 In this way the ‘Saam Rasa’ can lead to manifestation of ‘Saam Jivha’ (Coated Tongue).

Questionnaire for assessment of Etiological Factors and Symptoms of *Annavahasrotodushti* mentioned by *Acharya Charak*.

Assessment Criteria:

Sr. No.	Hetus Of <i>Annavahasrotodushti</i>	
1	Consumption Of Food In Excess Quantity	Yes/No
2	Consumption Of Untimely Food	Yes/No
3	Consumption Of Improper Food	Yes/No
4	Disturbance In Functioning Of <i>Jatharagni</i>	Yes/No

Sr. No.	<i>Lakshanas</i> Of <i>Annavahasrotodushti</i>	
1	<i>Anannabhilasha</i>	Yes/No
2	<i>Arochaka</i>	Yes/No
3	<i>Avipaka</i>	Yes/No
4	<i>Chardi</i>	Yes/No

Sr. No.	<i>Jivha Parikshan</i>	
1	<i>Saam Jivha</i>	Yes/No
2	<i>Niraam Jivha</i>	Yes/No

PLACE OF WORK-

Patients visiting to College, Hospital and through Camps organised by Hospital in surrounding were selected for the Study.

METHODS:

Study Type- Case Control Observational Study.

1.50 patients who were clinically pre-diagnosed with *Annavasrotodushti- Anannabhilasha, Arochaka, Avipaka* and *Chardi* were selected, when patient visited to College, Hospital and through Camps organised by Hospital in surrounding. Clinical Examination of Patients was done both,

through *Ayurved* and Modern. Questionnaire for assessment of Etiological Factors and Symptoms of *Anannavaahasrotodushti* mentioned by *Acharya Charak* (as attached in Annexure) were used. In above selected patients *Jivha Parikshan* (Tongue Examination) was done through *Darshan Pariksha* (Inspection), and those who had *Saam Jivha* (Thick Coated Tongue), that patients were selected. Above selected patients was instructed to perform tooth brush at night before sleep, they were given one sterilized container to collect the next morning first saliva before tooth brush. At last pH saliva was done with the help of pH Meter

2.50 Healthy Individuals who were clinically normal and had *Niraam Jivha* (Normal) were selected when they visited to College, Hospital and through Camps organised by Hospital in surrounding. Healthy Individuals were instructed to perform tooth brush at night before sleep, they were given one sterilized container to collect the next morning first saliva before tooth brush. At last pH saliva was done with the help of pH Meter.

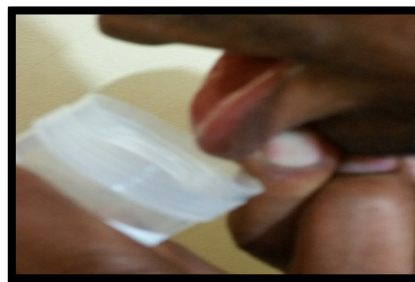
Method of *Jivha Parikshan* (Tongue Examination)

1. Examination of *Jivha* (Tongue) was done in good natural light.
2. Patients were asked to open their mouth.
3. Patients were asked to protrude out there tongue.
4. Tongue Examination was performed through *Darshan Pariksha* (Inspection) with the help of torch, for *Saam Jivha* (Thick Coated Tongue) and *Niraam Jivha* (Normal).
5. Those patients who had *Saam Jivha* (Thick Coated Tongue) were selected.

Method of Saliva Collection:

1. Patients were instructed to hold the lower lip with index finger and thumb and stretch it forward, for 05 to 10 minutes, so that there was accumulation of maximum saliva inside the cavity.
2. Patients were instructed to hold the sterile container, close to the lower lip with other hand.
3. Patients were instructed to slightly tilt the head and lower lip, to collect the Saliva in sterile container.
4. Patients were instructed to collect 10 ml to 15 ml saliva in sterile container.

METHOD OF SALIVA COLLECTION:



Method of Measuring pH Saliva

1. pH Saliva was measured through Digital pH meter (Company- HANNA INSTRUMENTS).
2. First removed the protective cap of pH meter and turned it on.
3. pH meter was immersed in the Saliva sample up to the maximum immersion level.
4. pH meter was stir gently in saliva container, and then waited till the display stabilized.
5. The number which was displayed on pH Meter screen was the pH of Saliva.

6. After every use, the electrode was rinsed with water to minimise contamination.

7. Protective cap was replaced after every use.
Normal Saliva pH Range: 06.4 To 06.8

Observation and Results:

Table 1: Jivha Parikshan (Tongue Examination) Distribution Of Patients:-

JIVHA PARIKSHAN						
	Parameter	ANNAVAHSROTODUSHTI			Normal	
	Group	F	P	Group	F	P
Valid	SAAM	50	100	NIRAAM	50	100
	Total	50	100	Total	50	100

F –Frequency, P- Percent

Table 2: Annavaahasrotodushti Hetu (Etiological Factors Of Vitiated Alimentary/ Digestive system)

ANNAVAHASROTODUSHTI HETU					
		AHARA			ANNAVAHINI DUSHYANTI
	Scale	ATIMATRA	AKALA	AHITA	
1	Yes	18 (36)	46 (92)	39 (78)	50 (50)
2	No	32 (64)	4 (8)	11 (22)	
	Total	50	50	50	50

Table 3: Annavaahasrotodushti Lakshan (Clinical Features Of Vitiated Alimentary/Digestive System)

ANNAVAHASROTODUSHTI LAKSHAN				
Scale	Anannabilasha	Arochaka	Avipaka	Chardi
Yes	32 (64)	36 (72)	50 (100)	6 (12)
No	18 (36)	14 (28)	0 (0)	44 (88)
Total	50	50	50	50

Table 4: p^H Saliva Reading

pH SALIVA READING		
Parameter	ANNAVAHASROTODUSHTI	Normal
Minimum	5.7	6.3
Maximum	6.4	7.2
Avarage	6.066	6.692
Standard Deviation	0.2026	0.2842
Confidence Interval	(5.6688,6.4632)	(6.1350,7.2489)

Table 5: Testing of Hypothesis: Hypothesis 1

H ₀ : There is Positive relation between Saam Jivha as alakshan in Annavaahasrotodushti with Saliva p ^H	H _R : There is no relation between Saam Jivha as a lakshan in Annavaahasrotodushti with saliva p ^H
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Table 6: Chi Square test:

Test Used	Calculated value	Table value	Level of significance	Degree of Freedom	Decision
Chi square test	1.6564	7.8142	0.05	3	Accept the Hypothesis

From above tables it is concluded that we accept the Hypothesis and says, there is Positive relation between *Saam Jivha* as a *lakshan* in *Annavaahasrotodushti* with saliva p^H

DISCUSSION

Discussion on Age

It is seen that 50 Percent of Patients of *Annavaahasrotodushti* lies in the age group 40 to 50, 34 Percent patients were in the age group 30 to 40. In Clinically Normal Healthy Individuals group, 44 Percent lay in the age group 40 to 50 while 30 Percent in the age group 30 to 40 and 26 Percent in the age group 20 to 30.

Discussion on Gender Group

It is seen that 52 Percent of Patients of *Annavaahasrotodushti* were male while 48 Percent were female. In normal group 56 Percent were male and 44 Percent were female.

Discussion on Socioeconomic Status

It is seen that 52 Percent Patients of *Annavaahasrotodushti* were Middle Class, 26 Percent Patients of *Annavaahasrotodushti* were lower Class and 22 percent Patients of *Annavaahasrotodushti* were Upper Class. While 58 percent were Middle Class, 24 percent were lower Class and 18 Percent were Upper class in Clinically Normal Healthy Individuals Group.

Discussion on *Jivha Parikshan*

It is seen that *Jivha Parikshan*, in *Annavaahasrotodushti* was *Saam* and in Clinically Normal Healthy Individuals it was *Niraam*.

Discussion on *Annavaahasrotodushti Hetu*

It is seen that 92 Percent Patients taken *Akala Ahar*, 78 Percent taken *Ahita Ahar* and 36 Per-

cent taken *Atimatra Ahar*. *Annavaahini Dushyanti* is 50 Percent which all are the *Annavaahasrotodushti Hetu* in the study.

Discussion on *Annavaahasrotodushti Lakshan*

It is seen that, 64 Percent Patients shows *Ananabhilsha*, 72 Percent shows *Arochaka*, 50 Percent shows *Avipaka* and 12 percent shows *Chardi* as *Annavaahasrotodushti lakshana*.

Discussion On pH Saliva Reading: *Annavaahasrotodushti* has p^H Reading as minimum 5.7 to maximum 6.4 with average 6.066 and standard deviation 0.2026 with confidence interval (5.6688,6.4632). Normal p^H saliva range is 6.4 to 6.8. Here, pH Saliva in *Annavaahasrotodushti* had lower range than normal range.

CONCLUSION

The obtained value of Saliva pH, which was present in Patients of *Saam Jivha* is lower than normal range. Thus, the obtained values of Saliva p^H in Patients of *Annavaahasrotodushti* having *Saam Jivha*, is moderate to highly acidic in nature. Hence it is proved that the *Saam Jivha* which is present due to *Annavaahasrotodushti* having strong association with Saliva p^H i.e. Saliva p^H becomes Acidic. The chronicity of *Saam Jivha* also indicates more trouble in metabolism. From the above study I conclude that only by examination of tongue (*Darshan Pariksha*) i.e. *Saam* or *Niraam Jivha Parikshan* gives the very important clues regarding diagnosis of present and future health status. Since lower Saliva p^H means moderate to highly acidic p^H which is not good for health. The chronicity may develop *Rasavaahasrotodushtjanya* or *Aamajanya* vikara, Cancer, Cardiomegaly, Angina Pectoris, Hypertension, and Rheumatoid Arthritis etc.

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