

CLINICOPATHOLOGICAL STUDY ON *NADI-PARIKSHA* IN *RAKTAGATAVATA* W.S.R.
TO HYPERTENSION: CASE STUDY ARTICLEVarasha^{*1}, Deena Nath Singh², Prakash Raj Singh³ and Tina Singhal⁴¹Junior Resident, Dept. of Roga Nidana Evam Vikriti Vigyana, Government Ayurvedic PG College and Hospital, Varanasi, Uttar Pradesh, India.²Assistant Professor, Dept. of Roga Nidana Evam Vikriti Vigyana, Government Ayurvedic PG College and Hospital, Varanasi, Uttar Pradesh, India.³Assistant Professor, Dept. of Kriya Sharir, Government Ayurvedic PG College and Hospital, Varanasi, Uttar Pradesh, India.⁴Assistant Professor, Dept. of Rachna Sharir, Government Ayurvedic PG College and Hospital, Varanasi, Uttar Pradesh, India.***Corresponding Author: Varasha**

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ABSTRACT

A large percentage of people worldwide suffer from high blood pressure, a serious health issue. It is frequently called the "silent killer" because, although it typically shows no symptoms, if treatment is not received, it can cause serious consequences. Maintaining cardiovascular health requires an understanding of hypertension, its causes, and efficient management techniques. The global prevalence of hypertension is estimated to be 26% of the world's population or 972 million people and is expected to increase to 29% by 2025. The incidence of high blood pressure in India is estimated to be around 30.7%, which means that one in every three adults in India has hypertension. *Ayurveda*, an ancient Indian system of medicine, offers a holistic approach to managing hypertension. It focuses on balancing the three doshas (*Vata*, *Pitta*, and *Kapha*) and eliminating toxins from the body. It is said in the scriptures that the disease should be examined first, after which medicines etc. should be arranged wisely. There are various types of *Rog-Rogi* Pariksha, including *Trividha* Pariksha, *Saptavidha* Pariksha, *Ashtavidha* Pariksha, *Dashavidha* Pariksha, and others, in *Ayurvedic* writings. Under the *Rog* Pariksha category, Yog Ratnakar's description of the *Ashatavidha* Pariksha includes the idea of *Nadi* Pariksha. It is one of the most important diagnostic tools in *Ayurveda*. In 1950, Acharya Y.N. Upadhyaya correlates *Raktagata Vata* with Hypertension, due to its symptoms are similar to high Blood Pressure.

KEYWORDS: Hypertension, Raktagata Vata, Nadi Pariksha.**INTRODUCTION**

Hypertension is a somewhat common condition that is characterised by excessive blood pressure against the walls of your arteries. It can eventually lead to a variety of health issues, such as heart disease.

विकारनामाकुशलो न जिह्मयात् कदाचन

न हि सर्वविकाराणां नामतोऽस्ति ध्रुवा स्थितिः (Ch.Su.18/44)

According to *Acharya Charaka*, sometimes it is neither possible nor it is necessary to identify a disease by a name. *Acharya Charaka* was the first to describe the *Raktagatavata* symptoms and treatment in *Vatavyadhi Chikitsa Adhyaay* (Ch. chi. 28/31, 92). In 1950, *Acharya Y.N. Upadhyaya* correlates *Raktagata Vata* with *Hypertension*, due to its symptoms are similar to high Blood Pressure. Our *Ayurvedic* texts don't directly

address Essential Hypertension, but based on *Nidana* and symptoms, *Raktagata Vata* can be extended to Hypertension. It can be concluded that hypertension is result of *Rakta Dushti* with Tridosh involvement. As it is considered as psychosomatic disease *mana* also involved in pathology of this disease.

Scripture states that the illness should be diagnosed first, followed by medication, etc. One of the most crucial *Ayurvedic* diagnostic tools is "Nadi Pariksha.". In India, *Nadi* Pariksha was initially documented in detail by adherents of the *Siddha School* like *Kanada* and *Ravana*. Later, *Ayurvedic* practitioners like *Shamgdhar*, *Bhavprakash*, and *Yogaratanakar* accepted it. This thesis uses *Nadi tarangini* equipment to investigate the scientific validity of *Nadi* pariksha. It shows that in Hypertensive people, the dominance of dosha determines the prominence of *Nadi* expression. On the base of the

angusthamool, three doshas are expressed at the Nadi beneath the index finger (*Vata dosha-Gati Sarpa* like), middle finger (*Pitta dosha- Manduka* like), and ring finger (*Kapha dosha-Hansa* like).

NEED OF THIS RESEARCH WORK

Diagnosis constitutes the foundational step in the management of any disease. Within the framework of Ayurveda, a comprehensive diagnostic process, known as Ashta-sthana Pariksha, is employed to assess both the disease entity (roga) and the patient's constitution (rogi bala). Among these diagnostic tools, Nadi Pariksha holds paramount significance. Nadi Pariksha, or pulse diagnosis, offers profound insights into the nature of a disease, enabling physicians to formulate precise treatment plans. The efficacy of Nadi Pariksha is underscored by the continued success of numerous contemporary practitioners who primarily rely on this method for disease diagnosis.

AIMS AND OBJECTIVE OF THE STUDY

1. To access the role of *Nadi Pariksha* in *Rakatagata Vata* patient.
2. To study on clinical incidence of Aetiology, types, signs & symptoms of *Rakatagata vata* in relation to hypertension in current medical practice.

HYPOTHESIS

- ☐ An Observational Study to access role of *Nadi Pariksha* in *Rakatagata vata*.
- ☐ Null Hypothesis (H_0) - There is no role of *Nadi Pariksha* in *Rakatagata vata*.
- ☐ Alternate Hypothesis (H_1) - There is significant role of *Nadi Pariksha* in *Rakatagata vata*.

PLAN OF THE STUDY

- ☐ Conceptual study
- ☐ Clinical study
- ☐ Observation and Result
- ☐ Discussion
- ☐ Summary and Conclusion

CONCEPTUAL STUDY

In this part, historical aspect of *Rakatagata vata* and *Nadi Pariksha* had been collected from classical text of Ayurveda, previous research work done, scientific journal, periodic magazines, monographs and other available source. Similarly modern review regarding the *Rakatagata vata* and *Nadi Pariksha* have been gathered

from the Modern Texts and various other online media. After thorough analysis, the data has been gathered and compiled in an organized manner.

DISEASE REVIEW

This section includes the detailed description about *Rakatagata vata* and *Nadi Pariksha* from both the Ayurvedic point as well as Modern point of view.

CLINICAL STUDY

A. Material and Methods

B. OBSERVATION AND RESULT MATERIAL AND METHODS

A. SOURCE OF DATA - In this study patients of *rakatagata vata* will be registered from OPD of RAC Varanasi. The selection of patient will be done on the basis of clinical features and diagnosis will be sustained by laboratory investigation.

B. METHOD OF COLLECTION OF DATA

Selection of Patients: For the clinical study, 100 patients were selected from the OPD of RAC Varanasi. Patients fulfilling the criteria for selection were enrolled into the study irrespective to their caste, religion, etc. A specially designed Proforma was prepared and informed consent has been taken from the Patients.

INCLUSION CRITERIA

1. Patient having sign and symptoms of *Rakatagata vata*.
2. Patient between age group 25 to 70 years of both sexes.
3. Patient was selected irrespective of their sex, occupation and religion etc.

EXCLUSION CRITERIA

1. Suffering from malignancies and chronic systemic diseases like severe renal disease, severe heart disease, endocrine disease.
2. *UchhaRaktachap* during pregnancy (preeclampsia and eclampsia).
3. Patients having HIV & other immune compromised disease like Diabetes mellitus.

ASSESSMENT CRITERIA

1. On the basis of Etiology
2. On the basis of signs & symptoms
3. On the basis of *Nadi-Pariksha*.

AAHARAJ NIIDAN

AAHARAJ NIIDAN	ABSENT	PRESENT
Excessive intake of ruksh, sheet, alpa, <i>laghu</i> , anna	0	1
Abhojnat	0	1
Aama dosha	0	1
Dominating ras in diet	0	1

VIHARAJ NIIDAN

VIHARAJ NIIDAN	ABSENT	PRESENT
Vyavaya	0	1

Atiprajagran	0	1
Diwaswapan	0	1
Abhighat	0	1
Langhan plawan	0	1
Veg sandharan	0	1
Gaj, ushtra, ashwa, shighra yanaapatasanata.	0	1

MANAS NIDAN

MANAS NIDAN	ABSENT	PRESENT
Chinta	0	1
Shoka	0	1
Krodhaa	0	1
Bhay	0	1
Marmaghata	0	1

GRADING FOR SUBJECTIVE CRITERIA

Sign/Symptoms	Absent	Present
Ruja (shiro ruja)	0	1
Santapa (mansik santap)	0	1
Vivarnata	0	1
Aruchi	0	1
Stambha	0	1
Paad daah (burning feet)	0	1
Bhram (giddiness)	0	1
Shothaa	0	1
Klama (fatigue)	0	1
Raktasrava	0	1
Spandan (palpitation)	0	1
Excessive sweating	0	1
Dyspnoea	0	1
Insomnia	0	1
Tinitus	0	1

INVESTIGATION

Before observation of *Nadi* of the patient, he/she should check up by B.P, Pulse rate.

2. Urine analysis for protein & glucose

Radiological Investigation

12 lead ECG & X-ray Chest

Biochemical investigation

1. Lipid profile, Sugar (F & PP)

GRADING FOR OBJECTIVE CRITERIA

Investigations	0	1	2	3
BP (SBP) mmHg	<140	141-150	151-160	>160
(DBP) mmHg	<90	90-100	100-110	>110
S. Cholesterol (mg/dl)	<200	200-250	250-300	>300
S. triglyceride (mg/dl)	<190	260-440	441-876	>877
LDL (mg/dl)	<100	100-130	130-160	>160
HDL (mg/dl)	>60	50-60	35-50	<35
LDL/HDL		0.5-3.0	3-6	>6
S. Chole. /HDL	3.3-4.4	4.4-7.1	7.1-11.0	>11

ANOVA test is used to find association between *Nadi Pariksha* & *Raktgatavata*.

Significance Level	p-value
Not Significant	p > 0.05
Significant	p < 0.05
Highly Significant	p < 0.001

OBSERVATIONS AND RESULT

PERSONAL HISTORY

Table – 1 Distribution of Cases according to Age.

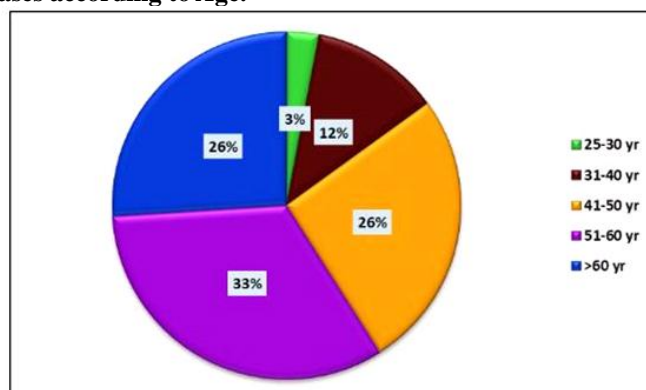


Table – 2 Distribution of Cases according to Gender.

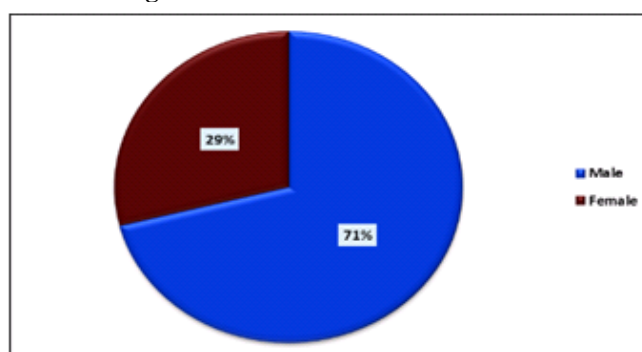
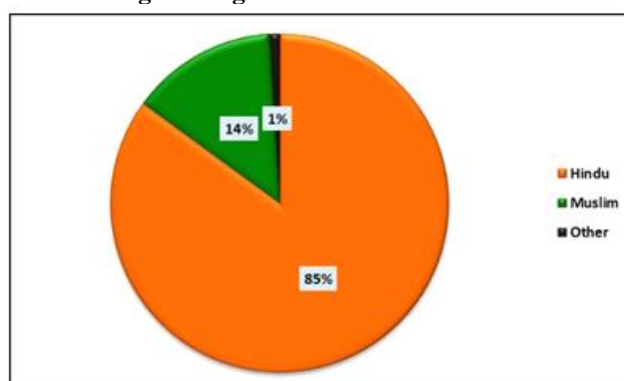


Table – 3 Distribution of Cases according to Religion.



Table– 4 Distribution of Cases according to Marital Status.

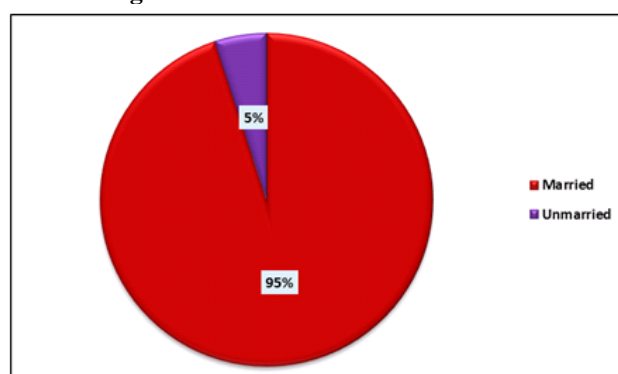


Table – 5 Distribution of Cases according to Occupation.

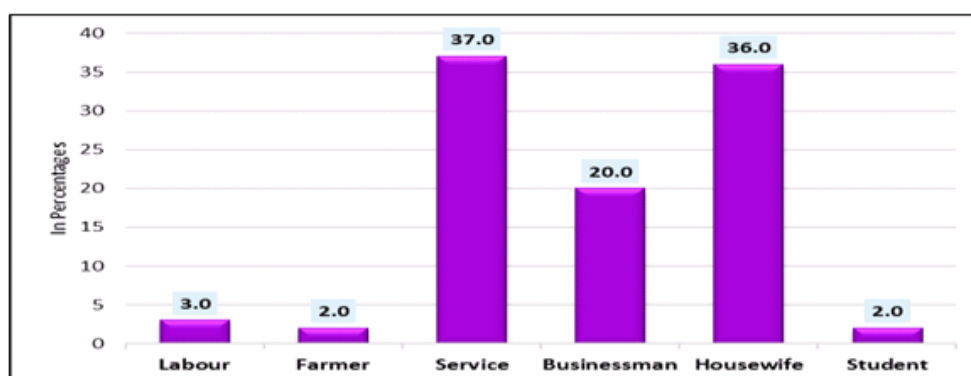


Table-6 Distribution of Cases according to Socio Economic Status.

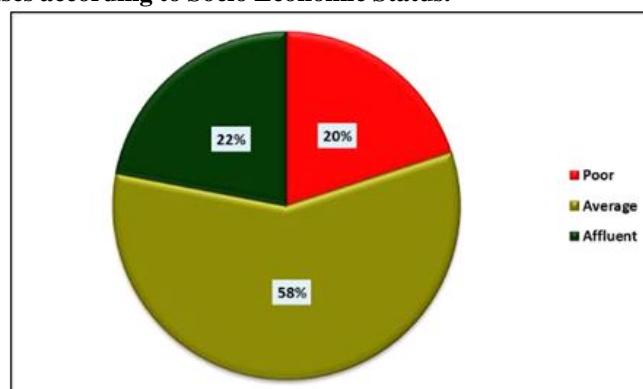


Table – 7 Distribution of Cases according to Habitat.

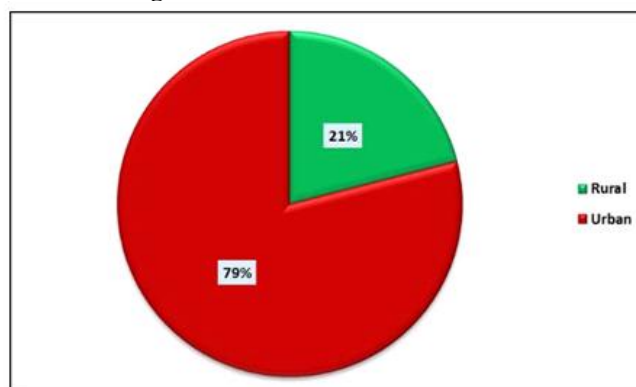


Table – 8 Distribution of Cases according to Family History.

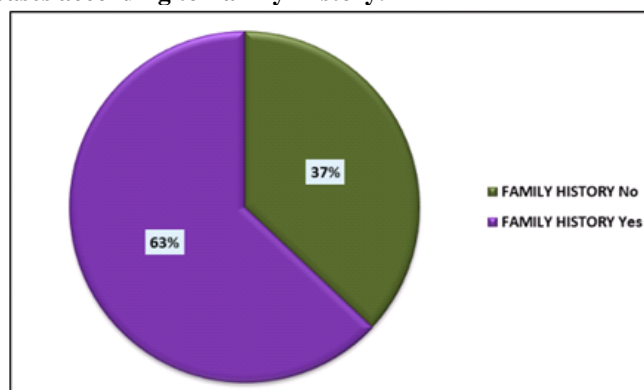


Table – 9 Distribution of Cases according to Diet.

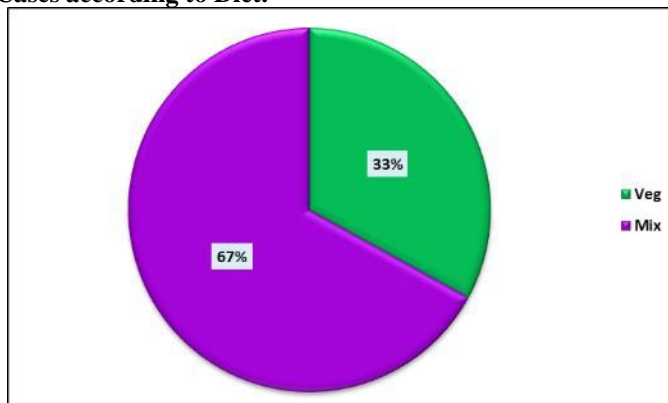


Table – 10 Distribution of Cases according to Education.

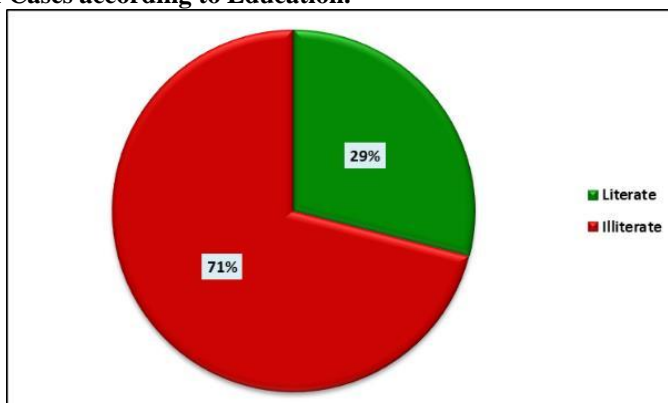


Table – 11 Distribution of Cases according to Agni.

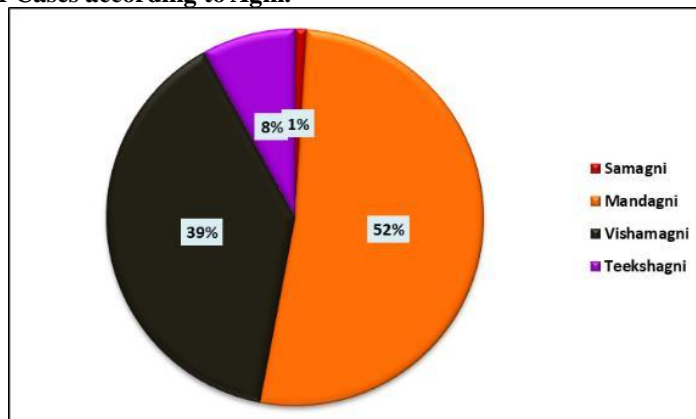


Table – 12 Distribution of Cases according to Koshta.

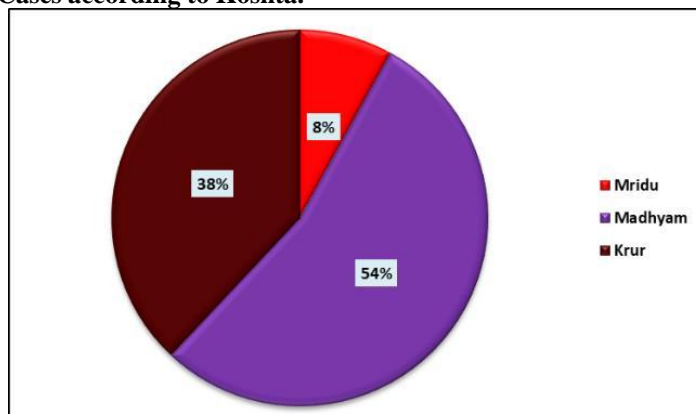


Table – 13 Distribution of Cases according to Water Intake.

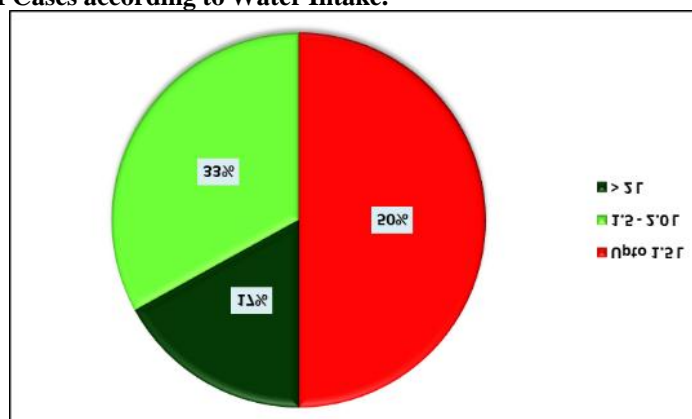


Table – 14 Distribution of Cases according to Addiction.

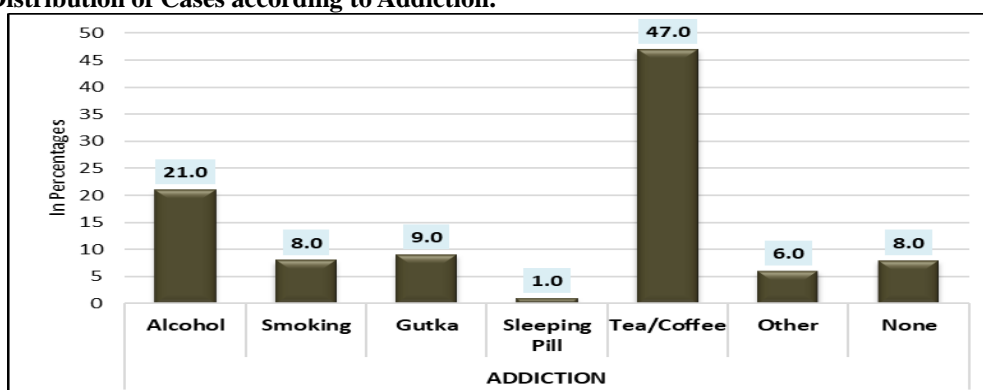


Table – 15 Distribution of Cases according to Bowel Habit.

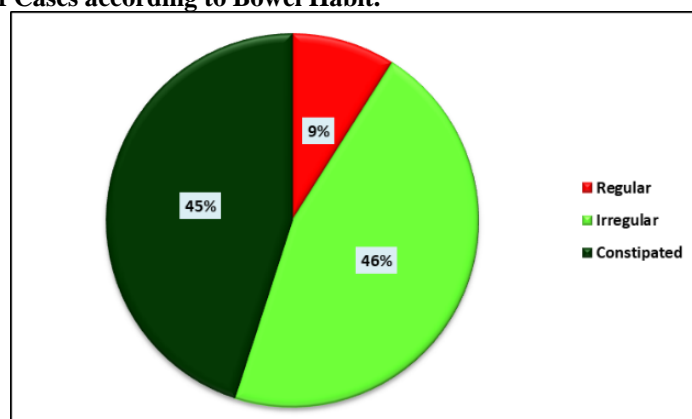


Table – 16 Distribution of Cases according to Urine.

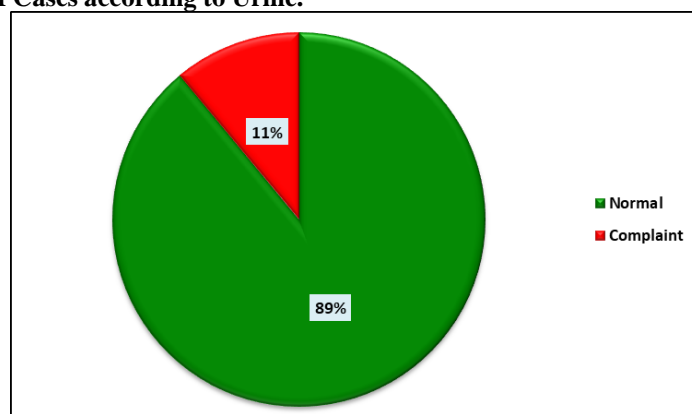


Table – 17 Distribution of Cases according to Sleep.

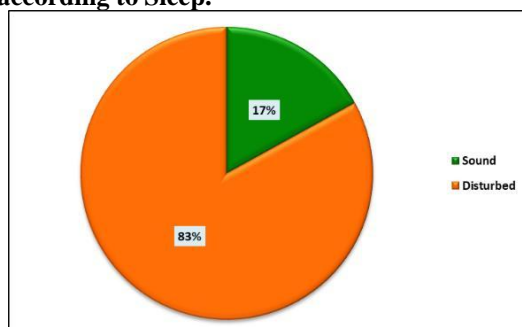


Table – 18 Distribution of Cases according to Nutrition.

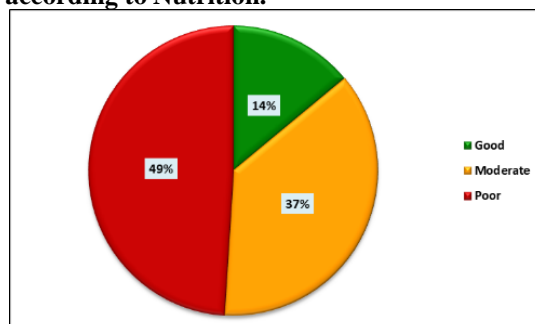
**DASHVIDHA & SHROTODUSTI PAREEKSHA**

Table – 19 Distribution of Cases according to Dashvidha Pareeksha.

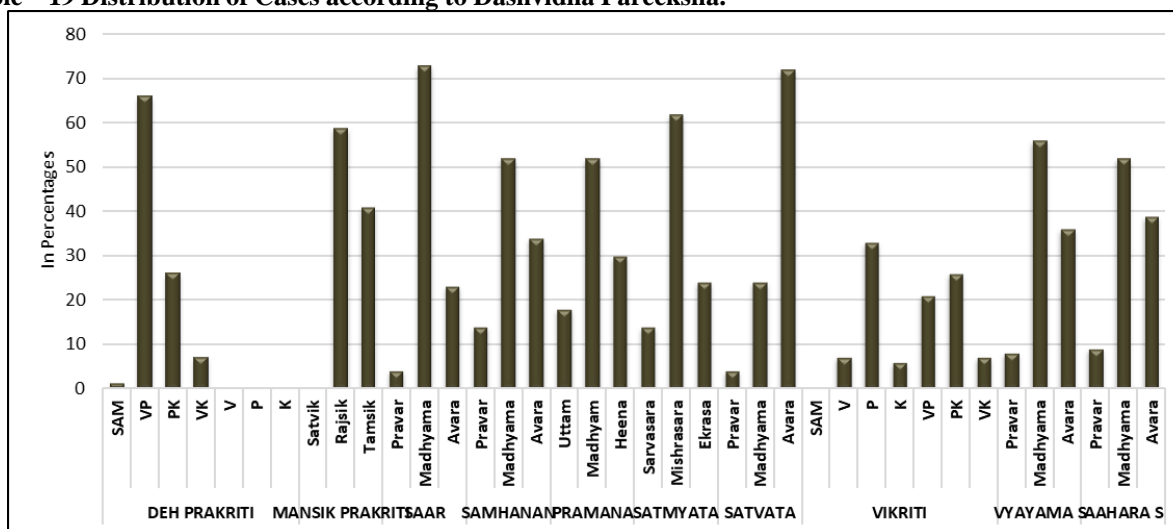
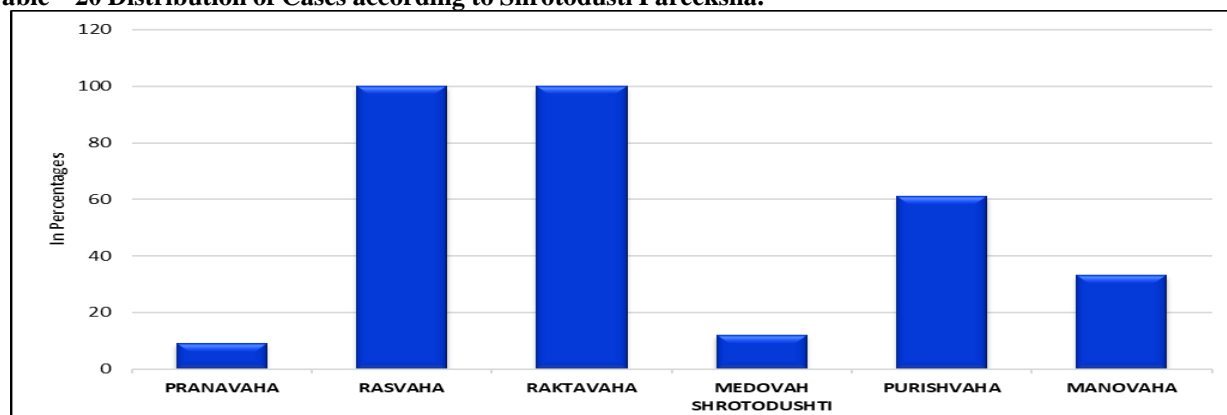
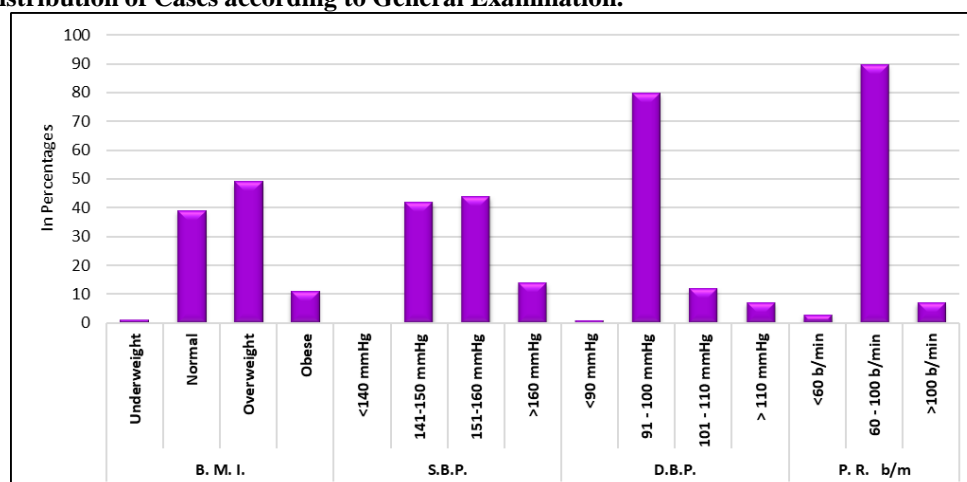


Table – 20 Distribution of Cases according to Shrotodusti Pareeksha.



GENERAL EXAMINATION

Table – 21 Distribution of Cases according to General Examination.



ETIOLOGICAL FACTORS

Table – 22 Distribution of Cases according to Aaharaj Nidan.

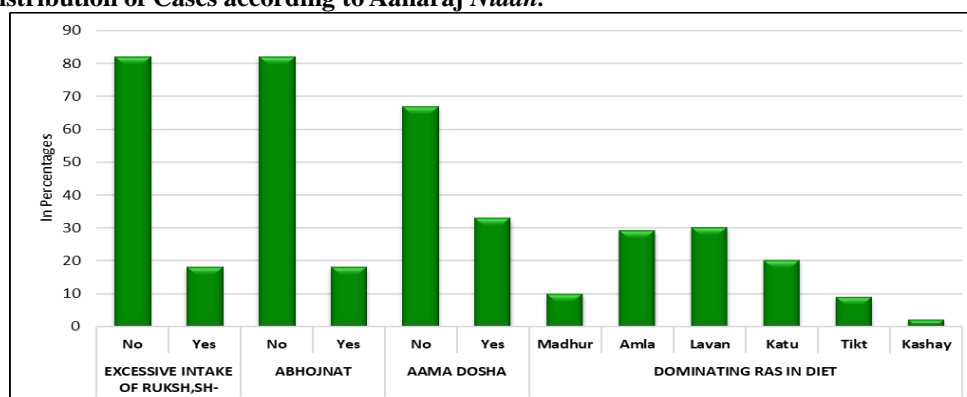


Table – 23 Distribution of Cases according to Viharaj Nidan.

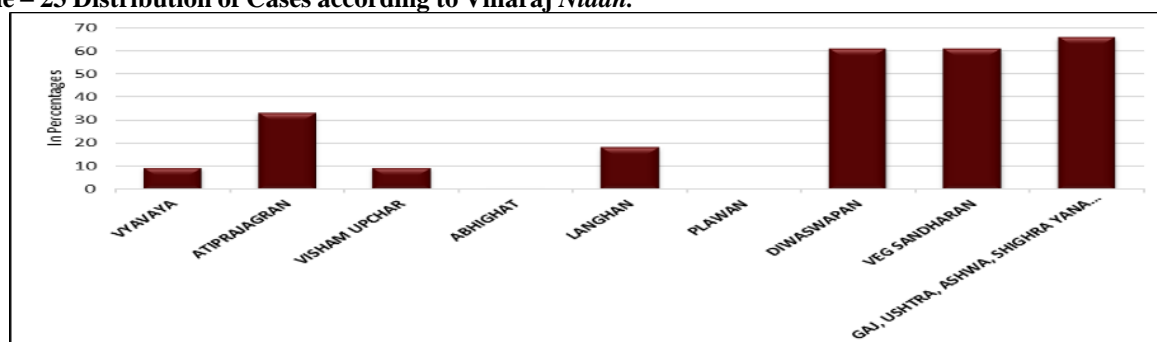
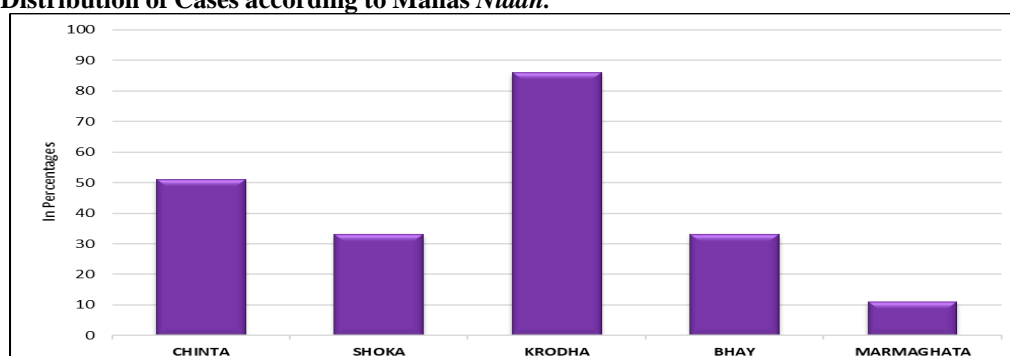


Table – 24 Distribution of Cases according to Manas Nidan.



SIGN & SYMPTOMS

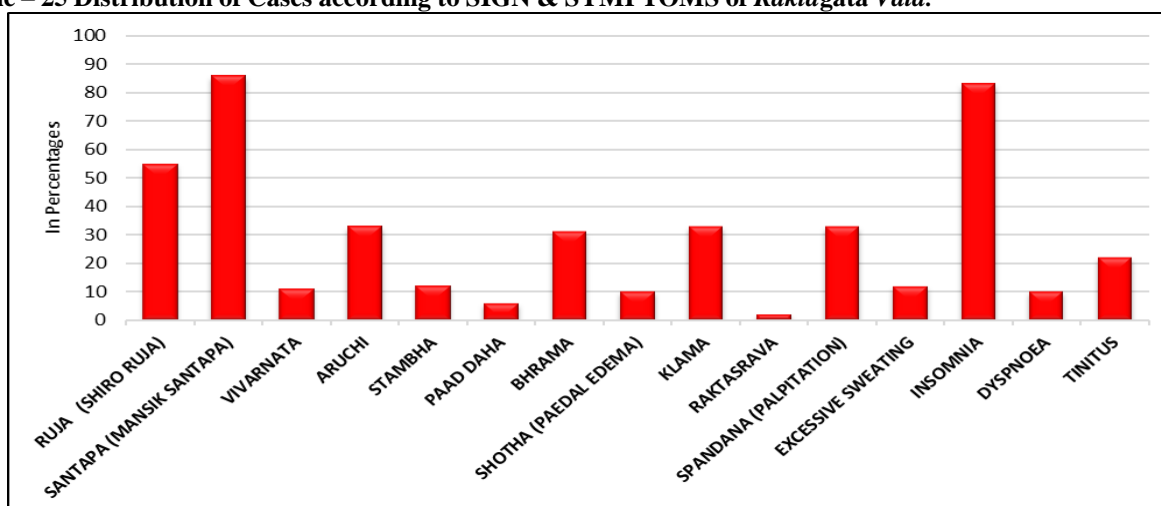
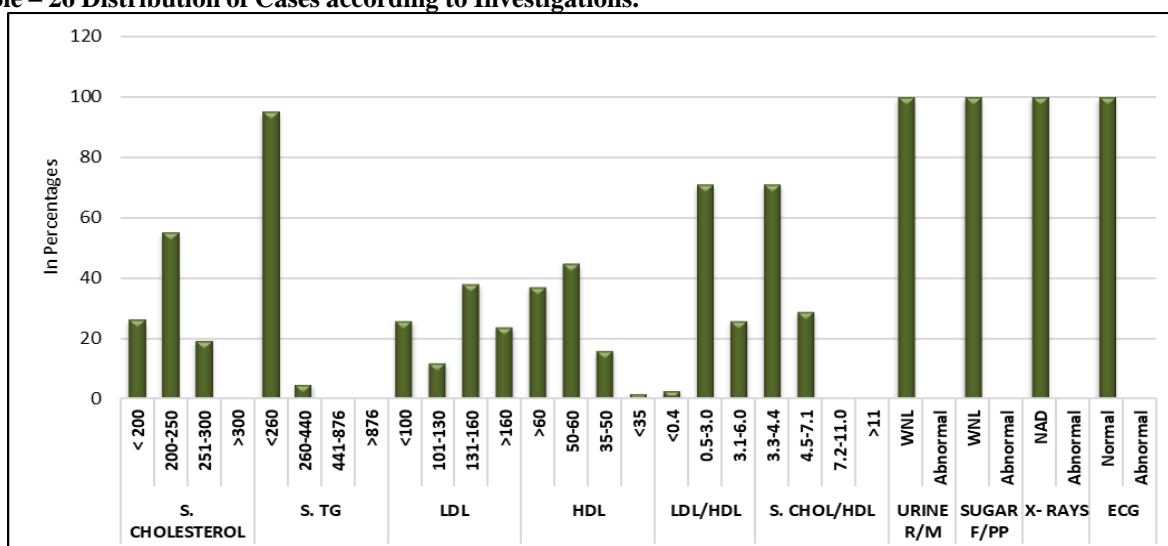
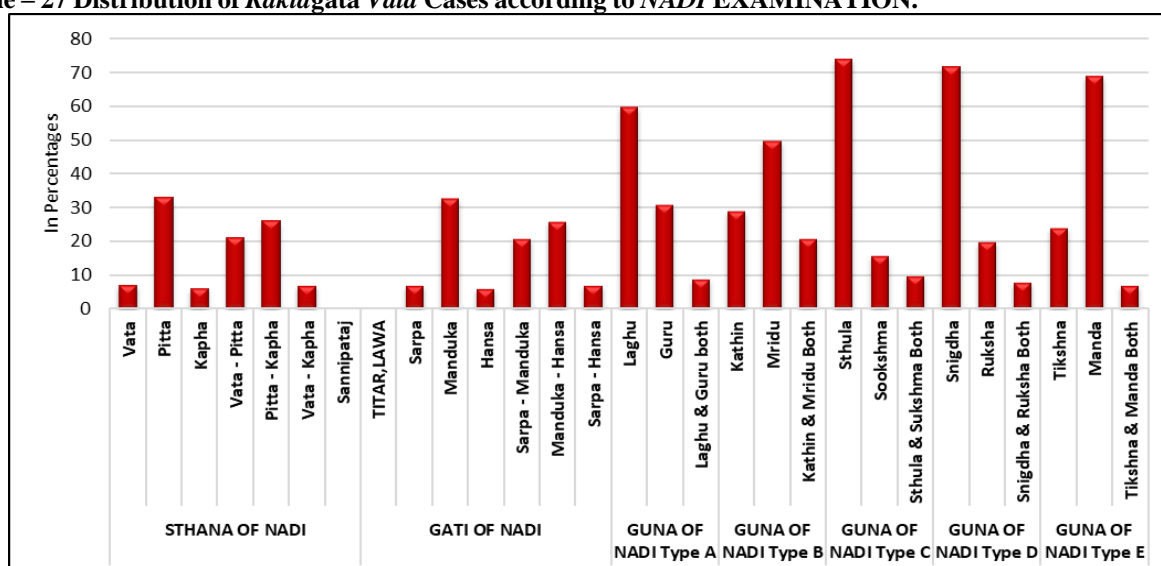
Table – 25 Distribution of Cases according to SIGN & SYMPTOMS of *Raktagata Vata*.

Table – 26 Distribution of Cases according to Investigations.



NADI EXAMINATION

Table – 27 Distribution of *Raktagata Vata* Cases according to NADI EXAMINATION.

ASSOCIATIONS & RELATIONSHIPS

Table – 28 Association of Sthana of Nadi with Symptoms of Raktagata Vata.

Table 25: Association of Sthana of Nadi with Symptoms of Pratikarya Vata													
Symptom	Vata		Pitta		Kapha		Vata - Pitta		Pitta -Kapha		Vata - Kapha		Signifi - cance
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Ruja (shiro ruja)	7	100	13	39.4	6	100	21	100	1	3.8	7	100	chi sq = 64.3, p<0.001
Santapa(mansik santapa)	4	57.1	33	100	6	100	19	90.5	24	92.3	0	0.0	chi sq = 55.4,p<0.001
Vivarna Ta	2	28.6	9	27.3	0	0.0	0	0.0	0	0.0	0	0.0	chi sq = 18.5, p<0.001
Aruchi	1	14.3	16	48.5	0	0.0	14	66.7	2	7.7	0	0.0	chi sq = 29.4, p<0.001
Stambh A	1	14.3	1	3.0	0	0.0	3	14.3	6	23.1	1	14.3	chi sq = 6.5, p = 0.258
Paad Daha	0	0.0	6	18.2	0	0.0	0	0.0	0	0.0	0	0.0	chi sq = 12.9, p = 0.024
Bhrama	1	14.3	12	36.4	0	0.0	16	76.2	1	3.8	1	14.3	chi sq = 33.9, p<0.001
Shotha A (paedaledeema)	1	14.3	0	0.0	0	0.0	1	4.8	1	3.8	7	100.0	chi sq = 69.2, p<0.001
Klama	1	14.3	16	48.5	0	0.0	14	66.7	2	7.7	0	0.0	chi sq = 29.4, p<0.001
Raktasr Ava	0	0.0	2	6.1	0	0.0	0	0.0	0	0.0	0	0.0	chi sq = 4.1, p = 0.529
Spandana (palpita Tion)	1	14.3	16	48.5	0	0.0	14	66.7	2	7.7	0	0.0	chi sq = 29.4, p<0.001
Excessi ve sweatin G	0	0.0	4	12.1	0	0.0	2	9.5	6	23.1	0	0.0	chi sq = 5.9,p = 0.329
Insomni A	7	100%	28	84.8%	6	100%	10	47.6%	26	100%	6	85.7%	chi sq = 26.7, p<0.001
Dyspno Ea	2	28.6	3	9.1	0	0.0	0	0.0	4	15.4	1	14.3	chi sq = 6.7, p = 0.244
Tinitus	0	0.0	6	18.2	0	0.0	5	23.8	10	38.5	1	14.3	chi sq = 8.3, p = 0.139

Table – 29 Association of Gati of Nadi with Symptoms of Raktagata Vata.

Symptom			GATI OF NADI										
	Sarpa		Manduka		Hansa		Sarpa -Manduka		Manduka - Hansa		Sarpa -Hansa		Signi- ficance
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Ruja (shiroRuja)	7	100	13	39.4	6	100	21	100	1	3.8	7	100	chi sq = 64.3, p<0.001
Santapa(mansik santapa)	4	57.1	33	100	6	100	19	90.5	24	92.3	0	0.0	chi sq = 55.4, p<0.001
Vivarn Ata	2	28.6	9	27.3	0	0.0	0	0.0	0	0.0	0	0.0	chi sq = 18.5, p<0.001
Aruchi	1	14.3	16	48.5	0	0.0	14	66.7	2	7.7	0	0.0	chi sq = 29.4, p<0.001
Stambh A	1	14.3	1	3.0	0	0.0	3	14.3	6	23.1	1	14.3	chi sq = 6.5, p = 0.258
Paad Daha	0	0.0	6	18.2	0	0.0	0	0.0	0	0.0	0	0.0	chi sq = 12.9, p = 0.024
Bhrama	1	14.3	12	36.4	0	0.0	16	76.2	1	3.8	1	14.3	chi sq = 33.9, p<0.001
Shotha a (paedal Edema)	1	14.3	0	0.0	0	0.0	1	4.8	1	3.8	7	100	chi sq = 69.2, p<0.001
Klama	1	14.3	16	48.5	0	0.0	14	66.7	2	7.7	0	0.0	chi sq = 29.4, p<0.001
RaktasRava	0	0.0	2	6.1	0	0.0	0	0.0	0	0.0	0	0.0	chi sq = 4.1, p = 0.529
Spandana (palpit Ation)	1	14.3	16	48.5	0	0.0	14	66.7	2	7.7	0	0.0	chi sq = 29.4, p<0.001
Excessive sweati Ng	0	0.0	4	12.1	0	0.0	2	9.5	6	23.1	0	0.0	chi sq = 5.9,p = 0.329
Insomn Ia	7	100.0%	28	84.8%	6	###	10	47.6%	26	100.0%	6	85.7%	chi sq = 26.7, p<0.001
DyspnoEa	2	28.6	3	9.1	0	0.0	0	0.0	4	15.4	1	14.3	chi sq = 6.7, p = 0.244
Tinitus	0	0.0	6	18.2	0	0.0	5	23.8	10	38.5	1	14.3	chi sq = 8.3, p = 0.139

Table – 30 Association of Guna of Nadi (Type A) with Symptoms of Raktagata Vata

Symptom	GUNA OF NADI Type A						Significance
	Laghu		Guru		Laghu & Guru both		
	No.	%	No.	%	No.	%	
ruja (shiroruja)	33	55.0%	19	61.3%	3	33.3%	chi sq = 2.2, p = 0.332
santapa(mansik santapa)	49	81.7%	28	90.3%	9	100%	chi sq = 2.9, p = 0.237
vivarnata	4	6.7%	5	16.1%	2	22.2%	chi sq = 3.1, p = 0.208
aruchi	21	35.0%	9	29.0%	3	33.3%	chi sq = 0.33, p = 0.848
Stambha	6	10.0%	5	16.1%	1	11.1%	chi sq = 0.73, p = 0.693
Paad daha	2	3.3%	3	9.7%	1	11.1%	chi sq = 1.92, p = 0.384
Bhrama	21	35.0%	8	25.8%	2	22.2%	chi sq = 1.16, p = 0.559
Shothaa (paedalEdema)	8	13.3%	2	6.5%	0	0.0%	chi sq = 2.17,p = 0.337
Klama	21	35.0%	9	29.0%	3	33.3%	chi sq = 0.33, p = 0.848
Raktasrava	1	1.7%	0	0.0%	1	11.1%	chi sq = 4.48, p = 0.107
Spandana (palpitation)	21	35.0%	9	29.0%	3	33.3%	chi sq = 0.33, p = 0.848
Excessivesweating	6	10.0%	4	12.9%	2	22.2%	chi sq = 1.14, p = 0.565
Insomnia	49	81.7%	26	83.9%	8	88.9%	chi sq = 0.31, p = 0.855
Dyspnoea	2	3.3%	4	12.9%	4	44.4%	chi sq = 15.12, p = 0.001
Tinitus	14	23.3%	4	12.9%	4	44.4%	chi sq = 4.20, p = 0.123

Table – 31 Association of *Guna of Nadi (Type B)* with Symptoms of *Raktagata Vata*.

Symptom	GUNA OF NADI Type B						Significance
	Kathin		Mridu		Kathin & Mridu Both		
	No.	%	No.	%	No.	%	
Ruja (shiro Ruja)	19	65.5%	27	54.0%	9	42.9%	chi sq=2.6, p=0.277
Santapa (mansik antapa)	24	82.8%	45	90.0%	17	81.0%	chi sq=1.4, p=0.506
Vivarnata	3	10.3%	7	14.0%	1	4.8%	chi sq=1.3, p=0.520
Aruchi	8	27.6%	21	42.0%	4	19.0%	chi sq=4.1, p=0.131
Stambha	2	6.9%	7	14.0%	3	14.3%	chi sq=1.0, p=0.604
Paad daha	2	6.9%	3	6.0%	1	4.8%	chi sq=0.1, p=0.952
Bhrama	6	20.7%	21	42.0%	4	19.0%	chi sq=5.7, p=0.059
Shothaa (paedal Edema)	5	17.2%	2	4.0%	3	14.3%	chi sq=4.1, p=0.128
Klama	8	27.6%	21	42.0%	4	19.0%	chi sq=4.1, p=0.131
Raktasrava	1	3.4%	1	2.0%	0	0.0%	chi sq=0.74, p=0.691
Spandana (palpitation)	8	27.6%	21	42.0%	4	19.0%	chi sq=4.1, p=0.001
Excessivesweating	2	6.9%	5	10.0%	5	23.8%	chi sq=3.7, p=0.159
Insomnia	28	96.6%	36	72.0%	19	90.5%	chi sq=8.9, p=0.012
Dyspnoea	4	13.8%	2	4.0%	4	19.0%	chi sq=4.4, p=0.112
Tinitus	4	13.8%	11	22.0%	7	33.3%	chi sq=2.7, p=0.258

Table – 32 Association of *Guna of Nadi (Type C)* with Symptoms of *Raktagata Vata*.

Symptom	GUNA OF NADI Type C						Significance
	Sthula		Sookshma		Sthula & Sukshma Both		
	No.	%	No.	%	No.	%	
Ruja (shiro Ruja)	38	51.4%	10	62.5%	7	70.0%	chi sq=1.7, p=0.434
Santapa (mansiksantapa)	65	87.8%	13	81.3%	8	80.0%	chi sq=0.81, p=0.668
Vivarnata	9	12.2%	2	12.5%	0	0.0%	chi sq=1.4, p=0.503
Aruchi	22	29.7%	8	50.0%	3	30.0%	chi sq=2.5 p=0.288
Stambha	8	10.8%	2	12.5%	2	20.0%	chi sq=0.7, p=0.702
Paad daha	4	5.4%	2	12.5%	0	0.0%	chi sq=1.9, p=0.390
Bhrama	19	25.7%	7	43.8%	5	50.0%	chi sq=3.9, p=0.143
Shothaa (paedal edema)	7	9.5%	2	12.5%	1	10.0%	chi sq=0.2, p=0.935
Klama	22	29.7%	8	50.0%	3	30.0%	chi sq=2.5, p=0.288
Raktasrava	1	1.4%	1	6.3%	0	0.0%	chi sq=1.8, p=0.399
Spandana (palpitation)	22	29.7%	8	50.0%	3	30.0%	chi sq=2.5, p=0.288
Excessivesweating	9	12.2%	1	6.3%	2	20.0%	chi sq=1.1, p=0.574
Insomnia	63	85.1%	13	81.3%	7	70.0%	chi sq=1.47, p=0.479
Dyspnoea	8	10.8%	1	6.3%	1	10.0%	chi sq=0.3, p=0.859
Tinitus	18	24.3%	2	12.5%	2	20.0%	chi sq=1.1, p=0.578

Table – 33 Association of *Guna of Nadi (Type D)* with Symptoms of *Raktagata Vata*.

Symptom	GUNA OF NADI Type D						Significance
	Snigdha		Ruksha		Snigdha & Ruksha Both		
	No.	%	No.	%	No.	%	
Ruja (shiroruja)	35	48.6%	15	75.0%	5	62.5%	chi sq=4.6, p=0.100
Santapa (mansik santapa)	63	87.5%	17	85.0%	6	75.0%	chi sq=1.0, p=0.620
Vivarnata	6	8.3%	4	20.0%	1	12.5%	chi sq=2.2, p=0.334
Aruchi	23	31.9%	7	35.0%	3	37.5%	chi sq=0.15, p=0.930
Stambha	7	9.7%	4	20.0%	1	12.5%	chi sq=1.6, p=0.457
Paad daha	3	4.2%	2	10.0%	1	12.5%	chi sq=1.6, p=0.450
Bhrama	22	30.6%	7	35.0%	2	25.0%	chi sq=0.3, p=0.865
Shothaa (paedal Edema)	7	9.7%	2	10.0%	1	12.5%	chi sq=0.1, p=0.970
Klama	23	31.9%	7	35.0%	3	37.5%	chi sq=0.1, p=0.930
Raktasrava	1	1.4%	0	0.0%	1	12.5%	chi sq=5.0, p=0.080
Spandana (palpitation)	23	31.9%	7	35.0%	3	37.5%	chi sq=0.1, p=0.930
Excessivesweating	8	11.1%	2	10.0%	2	25.0%	chi sq=1.4, p=0.494
Insomnia	58	80.6%	17	85.0%	8	100.0%	chi sq=2.0, p=0.368
Dyspnoea	7	9.7%	2	10.0%	1	12.5%	chi sq=0.1, p=0.970
Tinitus	19	26.4%	1	5.0%	2	25.0%	chi sq=4.2, p=0.121

Table – 34 Association of *Guna of Nadi (Type E)* with Symptoms of *RaktagataVata*.

Symptom	GUNA OF NADI Type E						Significance
	Tikshna		Manda		Tikshna & Manda Both		
	No.	%	No.	%	No.	%	
Ruja (shiro Ruja)	15	62.5%	36	52.2%	4	57.1%	chi sq=0.8, p=0.677
Santapa (mansik santapa)	20	83.3%	59	85.5%	7	100.0%	chi sq=1.3, p=0.529
Vivarnata	5	20.8%	5	7.2%	1	14.3%	chi sq=3.4, p=0.179
Aruchi	5	20.8%	25	36.2%	3	42.9%	chi sq=2.2, p=0.326
Stambha	4	16.7%	8	11.6%	0	0.0%	chi sq=1.5, p=0.482
Paad daha	3	12.5%	2	2.9%	1	14.3%	chi sq=3.8, p=0.148
Bhrama	5	20.8%	23	33.3%	3	42.9%	chi sq=1.8, p=0.407
Shothaa (paedaleedema)	2	8.3%	8	11.6%	0	0.0%	chi sq=1.0, p=0.583
Klama	5	20.8%	25	36.2%	3	42.9%	chi sq=2.2, p=0.326
Raktasrava	0	0.0%	2	2.9%	0	0.0%	chi sq=0.9, p=0.632
Spandana (palpitation)	5	20.8%	25	36.2%	3	42.9%	chi sq=2.2,p=0.326
Excessivesweating	3	12.5%	8	11.6%	1	14.3%	chi sq=0.1, p=0.975
Insomnia	23	95.8%	53	76.8%	7	100.0%	chi sq=6.1, p=0.047
Dyspnoea	2	8.3%	8	11.6%	0	0.0%	chi sq=1.0, p=0.593
Tinitus	3	12.5%	18	26.1%	1	14.3%	chi sq=2.2, p=0.337

Table – 35 Association of % Symptom Score of *RaktagataVata* with Sthana of *Nadi*.

Nadi Domain	Category	% Symptomscore		ANOVA	
		Mean	SD	F- value	p- value
Sthana of Nadi	Vata	20.95	15.12	9.58	<0.001
	Pitta	30.91	16.57		
	Kapha	13.33	0.00		
	Vata - Pitta	39.05	15.10		
	Pitta - Kapha	15.64	9.60		
	Vata - Kapha	17.14	7.56		

Table – 36 Association of % Symptom Score of *RaktagataVata* with *Gati of Nadi*.

Nadi Domain	Category	% Symptom score		ANOVA	
		Mean	SD	F-value	p-value
GATI OF NADI	Sarpa	20.95	15.12	9.58	<0.001
	Manduka	30.91	16.57		
	Hansa	13.33	0.00		
	Sarpa - Manduka	39.05	15.10		
	Manduka - Hansa	15.64	9.60		
	Sarpa - Hansa	17.14	7.56		

Table – 37 Association of % Symptom Score of *RaktagataVata* with *Guna of Nadi*.

Nadi Domain	Category	% Symptom score		ANOVA	
		Mean	SD	F - value	P - value
Guna of Nadi type a	Laghu	25.56	15.87	0.36	0.696
	Guru	25.38	15.34		
	Laghu & Guru both	30.37	22.64		
Guna of Nadi type b	Kathin	23.91	18.39	1.49	0.230
	Mridu	28.67	15.43		
	Kathin & Mridu Both	22.22	14.66		
Guna of Nadi type c	Sthula	24.68	16.58	1.08	0.342
	Sookshma	31.25	15.34		
	Sthula & SukshmaBoth	26.67	15.07		
Guna of Nadi type d	Snigdha	25.00	15.93	0.43	0.650
	Ruksha	28.00	14.61		
	Snigdha & Ruksha Both	29.17	23.62		
Guna of Nadi type e	Tikshna	22.78	12.88	0.63	0.536
	Manda	26.76	17.05		
	Tikshna & Manda Both	28.57	19.52		

DISCUSSION ON OBSERVATIONS AND RESULTS**Table No. 1: AS PER AGE INCIDENCE**

The majority 33% patients, under the 51-60 year age group, Both the 41-50 years and >60 years groups each accounting for 26.0% while 12.0% were between 31-40 years and 3.0% in the 25-30 years. It was observed that maximum patients belonged within Madhya Vaya (30 to 60 Years) in which *Pitta Dosha* is prominent. As *Rakta* is ashrya of *Pitta* so vitiation of *Rakta* by increase in its ushna, *Guru* & dravya properties may results in the rise of BP.

Table No. 2: AS PER GENDER INCIDENCE

The occurrence of *raktgatavata* seen more in males 71% than in females 29%. In India, men bear a greater share of the family's responsibilities than women do, which causes stress and elevated blood pressure.

Table No. 3: AS PER RELIGION WISE DISTRIBUTION

Maximum patient belongs to Hindu religion i.e. 85% whereas 14% belongs to Muslim religion and 1.0% belonging to other religions.

This shows geographical predominance of communities of Hindu and Muslim in Varanasi and surroundings areas and also maximum type of patients attending to our hospital.

Table No. 4: AS PER MARITAL STATUS

Maximum patients were married 95%, while 5% are unmarried, married person has more responsibilities and suffer from stress which further manifest into Hypertension.

Table No. 5: AS PER OCCUPATION WISE DISTRIBUTION

The majority of participants were engaged in service (37.0%), followed closely by housewives (36.0%). Businessmen constituted 20.0%, while a small portion were labourers (3.0%), farmers (2.0%), and students (2.0%).

When it comes to many civilian jobs, service man frequently experiences higher levels of stress due to unpredictable environment than business workers, Stress and loneliness in the home among housewives; and financial hardships experienced by retired and working-class people are the main causes of changes in psychological composition.

Table No. 6: AS PER SOCIO-ECONOMIC WISE DISTRIBUTION

The majority of participants 58.0% belonged to the average income group, followed by 22.0% from the affluent group, and 20.0% classified as poor. This indicates a majority of participants had an average economic standing.

Table No. 7: AS PER HABITAT WISE DISTRIBUTION

The majority of participants 79.0% resided in urban areas, while 21.0% were from rural regions. This indicates a predominantly urban participant which gives clue about impact of sedentary life style, environmental factors and dietary habit.

Table No. 8: AS PER FAMILY HISTORY

In terms of family history, 63.0% of the participants reported having a family history of related health issues, while 37.0% indicated that there was no such history. This suggests a significant prevalence of hereditary factors among the study population.

Table No. 9: AS PER DIETARY HABIT

Regarding dietary preferences, 33.0% of the participants identified as vegetarians, while the majority, 67.0%, followed a mixed diet.

Mansa Sevan is considered as one of the main *Nidana* responsible for Shonitaja Vikar, indicating the role of *Rakta* as a main *Dushya* in this disease.

Table No. 10: AS PER EDUCATIONAL STATUS

The majority of participants (71.0%) were illiterate, while (29.0%) were literate. However, educational level is not directly related to the pathogenesis of Hypertension. Lack of Information and delayed diagnosis and Treatment might be cause of hypertension.

Table No. 11: AS PER AGNI

The analysis of Agni among the participants revealed that the majority had *Mandagni* i.e. 52.0%. This was followed by *Vishamagni* at 39.0% while *Teekshagni* was observed in 8.0% of the participants. Only 1.0% had *Samagni*.

Mandagni leads to *Ama* or *Vidagdha Ama* causing atherosclerotic inflammatory types and *srotorodha* causes deprivation of nutrient to the *Rasa dhatu* and results degenerative changes. It indicates *Vata* as well as *Pitta* also responsible for occurrence of the disease.

Table No. 12: AS PER KOSHATA

The distribution of *Koshata* among participants revealed that 54.0% had a *Madhyam Koshta*, while 38.0% had a *Krur Koshta*, and 8.0% had a *Mridu Koshta*. This indicates that the majority of participants had a moderate digestive capacity.

Table No. 13: AS PER WATER INTAKE

Majority of participants (50.0%) reported consuming up to 1.5 liters of water daily, 33.0%, indicated an intake 1.5 to 2.0 liters, while the remaining 17.0% consumed more than 2 liters. This data suggests that most individuals in the study maintain a moderate level of hydration.

Table No. 14: AS PER ADDICTION

Majority of participants, 47.0% of respondents consumed

tea or coffee, 21.0% of alcohol use, gutka was noted by 9.0%, while 8.0% admitted to smoking, 6.0% reported other forms of addiction, whereas 8.0% claimed to have no addictions at all and only 1% on sleeping pill.

This study demonstrated that the patients were addicted to mainly tea/coffee and alcohol. These are considered as provoking factor for disease.

Table No. 15: AS PER BOWEL HABIT

Majority of participants, 46.0% exhibited irregular bowel habits, 45.0% as constipated and 9.0% reported having regular bowel movements. This suggests highlighting potential areas for health intervention and dietary management.

Table No. 16: AS PER URINE

Majority of participants, 89.0% reported normal urine. However, a notable 11.0% of individuals experienced urinary complaints.

This suggests that grade -1 hypertensive patients (B.P 140-159/90-99 mmHg) did not experience urinary complaints.

Table No. 17 AS PER SLEEP

Majority of patients (83%) experienced disturbed sleep, which can lead to an increase in blood pressure due to stress hormone, such as cortisol and by activating Sympathetic nervous system.

Table No. 18: AS PER NUTRITION

Majority of patients 49% reported poor nutritional status, 37.0%, considered their nutrition to be moderate. only 14.0% of participants rated their nutritional intake as good.

This indicates a concerning trend in dietary habits among the participants, emphasizing the need for nutritional interventions and education to improve overall health outcomes.

Table No. 19: AS PER DASHVIDHA PAREEKSHA

Deh Prakriti- the majority of participants (66.0%) were classified as *Vata-Pitta* (VP), (PK) at 26.0%, (7.0%) were as (VK), and only 1.0% had a Sam Prakriti.

For Mansik Prakriti-Rajsik as (59.0%), while Tamsik were present in 41.0% of participants. There were no participants with a Satvik Mansik Prakriti.

In terms of **Saar**, most participants were of Madhyama quality (73.0%), followed by Avara (23.0%), with a small portion (4.0%) having a Pravar Saar.

Similarly, for **Samhanan**, Madhyama was the most prevalent (52.0%), with Avara at 34.0% and Pravar at 14.0%.

For **Pramana**, 52.0% of participants were Madhyam,

while Heena was noted in 30.0% and Uttam in 18.0%.

Regarding **Satmyata**, Mishrasara was the most common (62.0%), followed by Ekrasa (24.0%) and Sarvasara (14.0%).

In **Satvata**, the majority of participants had an Avara Satvata (72.0%), with 24.0% being Madhyama and only 4.0% having Pravar Satvata.

For **Vikriti**, the most prevalent combination was *Pitta-Kapha* (PK) at 26.0%, followed by *Vata-Pitta* (VP) at 21.0%, and *Pitta* (P) at 33.0%. Other classifications included *Vata* (V) at 7.0%, *Kapha* (K) at 6.0% and *Vata-Kapha* (VK) at 7.0%. As stated earlier Raktgata *Vata* is result of *Rakta Dushti* with Tridosh involvement.

Regarding **Vyayama Shakti**, 56.0% of participants had a Madhyama capacity for exercise, while 36.0% were classified as Avara, and only 8.0% as Pravar.

Finally, in **Aahara Shakti**, 52.0% were classified as Madhyama, with 39.0% as Avara, and 9.0% as Pravar. These are considered as provoking factor for disease.

Table No. 20: AS PER SHROTODUSTI PAREEKSHA

The *Shrotodusti* Pareeksha data reveals that all participants (100.0%) exhibited Rasvaha and *Raktavaha Shroto Dushti*, indicating disturbances in the channels responsible for circulating plasma and blood. *Purishvaha Shroto Dushti*, related to the excretory system, was present in 61.0% of the participants, while *Manovaha Shroto Dushti*, affecting the mental faculties, was observed in 33.0%. Additionally, *Medovaha Shroto Dushti*, associated with fat metabolism, was seen in 12.0%, and *Pranavaha Shroto Dushti*, concerning the respiratory channels, was identified in 9.0% of the participants.

Hypertension is mainly disease of *Rasa-Raktavaha srotasa*. Involvement of *Manovaha srotasa* indicates its psychosomatic nature. *Dushti* of other *Srotasa* also affects the pathogenesis of Hypertension.

Table No. 21: AS PER GENERAL EXAMINATION

In terms of Body Mass Index (B.M.I.), 1.0% of individuals were underweight, while 39.0% fell within the normal range. However, a significant proportion of participants were either overweight (49.0%) or obese (11.0%).

Regarding Systolic Blood Pressure (S.B.P.), none of the participants had a reading below 140 mmHg. 42.0% had readings between 141-150 mmHg, 44.0% were in the range of 151-160 mmHg, and 14.0% had S.B.P. higher than 160 mmHg.

In terms of Diastolic Blood Pressure (D.B.P.), 1.0% of participants had D.B.P. below 90 mmHg, while the

majority (80.0%) had D.B.P. readings between 91-100 mmHg, 12.0% had readings between 101-110 mmHg, and 7.0% had D.B.P. exceeding 110 mmHg.

For Pulse Rate (P.R.), 3.0% had a pulse rate below 60 beats per minute, while the majority (90.0%) had a pulse rate within the normal range of 60-100 beats per minute. 7.0% had a pulse rate exceeding 100 beats per minute. These findings highlight prevalent issues with elevated blood pressure and an increased risk of hypertension among participants.

ETIOLOGICAL FACTORS

Table No. 22 AS PER AHARAJA NIDANA

In the AAHARAJ NIDAN assessment, dietary habits and their potential impacts on health were evaluated among participants. Regarding the excessive intake of Ruksh (dry) substances, 82.0% reported no excessive consumption, while 18.0% acknowledged such intake. Similarly, when asked about Abhojnat (eating without appetite), 82.0% indicated they do not engage in this behavior, while 18.0% admitted to it.

The presence of *Aama Dosha* (toxins) was also assessed, revealing that 67.0% of participants reported no signs of *Aama Dosha*, whereas 33.0% confirmed its presence in their condition. Furthermore, participants were asked about the dominant taste (Ras) in their diet. The responses showed that 10.0% favored *Madhur* (sweet), 29.0% *Amla* (sour), 30.0% *Lavan* (salty), 20.0% *Katu* (pungent), 9.0% *Tikta* (bitter), and 2.0% *Kashay* (astringent). These findings indicate a diverse range of dietary practices among participants, with implications for their overall health and well-being. *Tridosha* Prakopa, which is likewise linked to a pattern of rasa usage, may be the cause of essential hypertension.

Table No. 23 AS PER AS PER VIHARAJA NIDANA

The Viharaj Nidan data shows that 66.0% of the participants experienced issues related to Gaj, Ustra, Ashwa, Shighra Yana Apatasanata, indicating stress due to rapid or erratic movement or travel. Diwaswapana and Veg Sandharana were observed in 61.0%, Atiprajagraha in 33.0%, while Langhana was noted in 18.0%. Vyavaya and Visham Upchar were reported by 9.0% of the participants, while Abhighata and Plavana were not observed in any participants. Wakefulness at night causes disturbance in activities of digestive enzymes which leads to indigestion. When you're sleep-deprived, your body produces more cortisol, a stress hormone. High cortisol levels can constrict blood vessels, leading to increased blood pressure. Specifically, from Purisha, Vegavidhrana aggravates Apana Vayu and reduces Agni quality, which further contributes to the development of disease. Excessive use of vehicles causes vat prakopa which is provoking factor for disease.

On average, 61% of respondents reported 1-2 hours of Diwaswapna every day. Sleeping throughout the day weakens the digestive system and vitiates the *Kapha*. By

interfering with the natural cycle of digestive enzymes, it causes a delay in stomach emptying and impairs gastric myoelectric activity.

Table No. 24 AS PER MANAS NIDANA

The Manas Nidan data highlights that 86.0% of the participants experienced *Krodhaa* (anger), making it the most prevalent mental condition. Chinta affected 51.0%, while both Shoka and Bhaya were observed in 33.0% of the participants. Marmaghata (emotional trauma or shock) was noted in 11.0% of the cases. These findings point to significant emotional and psychological challenges among the group.

Table No. 25 AS PER SIGN & SYMPTOMS of Raktagata Vata

Notably, while a significant 86% experienced *Santapa* (mental distress), Insomnia in 83% 55.0% reported experiencing *Ruja* (headache), *Aruchi* (loss of appetite), *Klama* (fatigue) and Spandan (palpitation) in 33.0%, *Bhrama* (dizziness) in 31.0%. And tinnitus at 22.0%

Mansik Santapa

Most of the stress factors like Chinta, Bhaya, Shoka are well known causative factors for *Vata*. Bhaya, Shoka and *Krodhaa* are mentioned as the factors vitiating *Pitta*. Sushruta has explained that factors vitiating *Pitta* invariably vitiate the *Rakta* also. This factor tends to elevate Raja and *Tamo Gunas* which cause *Mano Dushti*. The Manasa Bhavas play a role in production of Jatharagni mandya. Also, they are cited as the cause of *Rasapra Doshaja* Vikara, as Chinta has been mentioned by Charaka as causative factor of *Rasavaha Srota Dushti*.

Nidranasha (insomnia): Vitiating Vata and Pitta and Manasa Santapa are responsible for Nidranasha (Su. SA. 4/42). Charaka has mentioned Aswapna under Nanatmaja Vikara of Vata (Ch. Su. 20/11). Acharya Sushruta has mentioned Nidranasha in symptoms Vata Vriddhi and Nidra-alpata under the symptoms of Pitta Vriddhi, (Su.15/14).

Ruja (shiro Ruja): Shula cannot occur without the vitiation of *Vata* (Su.Su.17/7). Acharya Charaka has included Shirahshula in 80 types of Nanatmaja Vata vyadhi. Vitiating Vata *Dosha* causes vitiation of *Rakta*, localizing in Shira, produce *Shiroroga* like *Shirahshula*.

Spandan (palpitation): It is considered as *Vata* Nanatmaja Vikara. Here *Vyana Vayu* is aggravated with its Chala *Guna* resulting in *Spandana*.

Bhrama (giddiness): According to Acharya Sushruta *Bhrama* occurs as a result of vitiating Raja, *Pitta* and *Vata*. (Su. Sa. 4/56). The Chala *Guna* of Vayu becomes dominant due to inflated Raja *Dosha* (Dalhana on Su. Sa. 1/20), makes patient to feel him like revolving.

Klama (Easy Fatigability): Without doing any physical or

mental work, tiredness of the body and mind called *Klama* (Su. Sa. 4/51). *Charaka* has mentioned *Klama* under *Raktaja Pradoshaja Roga*. (Ch. Su. 24/14). *Klama* is a symptom mentioned in *Pittavrita* *Udana* (Ch.Chi.28/222, Su.Ni.1/35), *Pittavrita* *Vyana* (Ch.Chi.28/227-228, Su.Ni.1/38) and in *PittajaHridroga* (Ch.Su.17/33).

These observations suggest that it is a *Vata Pitta* *Pradhana TriDoshaja* *Vyadhi* occurring with involvement of *Rakta Dushti*. *Raja* and *Tama* is also contributory factor for this disease.

Table – 26 Distribution of Cases according to Investigations

The investigation results reveal key insights into the participants' health profiles regarding lipid levels and other parameters. For S. Cholesterol, 26.0% of individuals had levels below 200 mg/dL, while the majority, 55.0%, fell within the 200-250 mg/dL range. A smaller proportion, 19.0%, had cholesterol levels between 251-300 mg/dL, with no participants exceeding 300 mg/dL.

In terms of S. Triglycerides, a remarkable 95.0% of the participants had levels below 260 mg/dL, with only 5.0% falling between 260-440 mg/dL, and none exceeding that threshold. The LDL levels showed that 26.0% had levels under 100 mg/dL, while 12.0% ranged from 101-130 mg/dL, 38.0% fell within 131-160 mg/dL, and 24.0% exceeded 160 mg/dL.

For HDL, 37.0% of participants had levels greater than 60 mg/dL, 45.0% were between 50-60 mg/dL, 16.0% fell in the 35-50 mg/dL range, and 2.0% had levels below 35 mg/dL. The LDL/HDL ratio showed that 3.0% were below 0.4, 71.0% ranged from 0.5-3.0, and 26.0% fell between 3.1-6.0. Furthermore, S. Cholesterol/HDL ratios indicated that 71.0% had values between 3.3-4.4, and 29.0% were in the 4.5-7.1 range, with no individuals exceeding 7.2.

All participants showed normal results for Urine R/M, Sugar F/PP, X-rays, and ECG, confirming a lack of abnormalities in these tests. These findings highlight the overall health status of the participants concerning lipid levels, with a notable absence of severe abnormalities in other diagnostic tests.

Table – 27 Distribution of Raktagatavata Cases according to NADI EXAMINATION

The distribution of *Raktagata vata* cases based on the *Nadi* examination reveals significant insights into the predominant *Doshic* influences and characteristics of the participants.

STHANA OF NADI

The examination of the *Sthana* of *Nadi* indicated that 33.0% of cases were associated with *Pitta*, making it the most common *Dosha* observed. This was followed by

Vata at 7.0%, *Kapha* at 6.0%, and the combined *Vata - Pitta* and *Pitta - Kapha* cases at 21.0% and 26.0%, respectively. Interestingly, there were no cases classified as *Sannipataj*, suggesting a lack of cases exhibiting a simultaneous predominance of all three *Doshas*.

Studying the role of temperament in the genesis of *RAKTAGATA VATA* it was found that *Vata-Pitta* *Prakruti* (65%) and *Rajas* (75%) *Prakruti* was dominated. This shows that probably population with aforesaid temperament is more susceptible to develop the disease.

Under *VIKRITI*, 33% of participants were categorized as *P*, 26% as *PK*, 21% as *VP*, 7% as *V* and 6% *K*, and no participants were classified as *Sannipataj*.

GATI OF NADI

When analyzing the *Gati* of *Nadi*, the *Manduka* type was noted to be most prevalent, accounting for 33.0% of the cases, while *Sarpa* represented 7.0%. Additionally, the combination types *Sarpa - Manduka* and *Manduka - Hansa* were found in 21.0% and 26.0% of cases, respectively. The *Sarpa - Hansa* type constituted 7.0%, indicating a diverse array of *Nadi* movements.

GUNA OF NADI

Type A: *Laghu* was dominant in 60.0% of cases, while *Guru* was found in 31.0%, and both characteristics were observed in 9.0%.

Type B: For *Guna* Type B, *Mridu* was noted in 50.0% of cases, compared to *Kathin* at 29.0%, with both traits appearing in 21.0% of cases.

Type C: *Sthula* predominated at 74.0%, followed by *Sookshma* at 16.0%, and both present in 10.0% of the participants.

Type D: In terms of *Snigdha*, 72.0% were categorized under this quality, while *Ruksha* was seen in 20.0%, and both qualities were present in 8.0% of the cases.

Type E: Lastly, *Manda* was the most common in 69.0%, with *Tikshna* present in 24.0%, and both observed in 7.0%. Overall, the *Nadi* examination reflects a varied distribution of *Raktagata Vata* cases, highlighting predominant *Pitta* characteristics and a balance of *Laghu*, *Sthula*, and *Snigdha* qualities in the individuals studied. These findings can aid in tailoring specific treatments and interventions based on the *Doshic* balance observed during the examination.

ASSOCIATIONS & RELATIONSHIPS

Table – 28 Association of Sthana of Nadi with Symptoms of RaktagataVata

The association of *Sthana* of *Nadi* with the symptoms of *RaktagataVata* illustrates significant relationships between various *Doshic* types and the presence of specific symptoms. The analysis of symptoms across different *Nadi* *Sthanas* indicates how these traditional

diagnostic methods correlate with clinical manifestations. *Ruja* (Shiro *Ruja*): This symptom exhibited a strong association with the *Pitta* type, where 39.4% of cases reported it. Notably, it was present in 100% of cases for *Vata*, *Kapha*, *Vata - Pitta*, and *Vata - Kapha* types, indicating a chi-square value of 64.3 ($p < 0.001$). This suggests that *Ruja* is predominantly linked with individuals exhibiting various *Doshic* imbalances, particularly *Vata*.

Santapa (Mansik *Santapa*): Here, 100% of the *Pitta* cases reported this symptom, along with 90.5% of the *Vata - Pitta* cases and 92.3% of the *Pitta - Kapha* cases, showing a chi-square value of 55.4 ($p < 0.001$). The significant prevalence indicates that mental distress is closely associated with *Pitta* dominance.

Vivarnata: This symptom showed limited presence, particularly among *Vata* and *Pitta* at 28.6% and 27.3%, respectively, with no occurrences in *Kapha* or combined types, yielding a chi-square value of 18.5 ($p < 0.001$).

Aruchi: The symptom of lack of appetite appeared most frequently in *Pitta* cases (48.5%) and in the *Vata - Pitta* group (66.7%), with a chi-square value of 29.4 ($p < 0.001$). This suggests a strong correlation of *Aruchi* with *Pitta* and combined *Dosha* types.

Stambha: This symptom did not show a significant association across the *Doshic* types, with a chi-square value of 6.5 ($p = 0.258$), indicating a more random distribution.

Paad Daha: This symptom was present in 18.2% of *Pitta* cases, with a chi-square value of 12.9 ($p = 0.024$), suggesting a lesser but notable correlation with *Pitta*.

Bhrama: Symptoms of dizziness were most common in the *Vata - Pitta* group (76.2%), reflecting a chi-square value of 33.9 ($p < 0.001$), indicating a strong association.

Shothaa (Pedal Edema): The *Kapha* group showed a significant prevalence at 100%, indicating a strong connection with this symptom (chi-square=69.2, $p < 0.001$).

Klama: Fatigue was highly associated with the *Pitta* group (48.5%) and particularly within the *Vata - Pitta* and *Vata - Kapha* groups, indicated by a chi-square value of 29.4 ($p < 0.001$).

Raktasrava: This symptom did not show significant associations, with a chi-square value of 4.1 ($p = 0.529$).

Spandana (Palpitation): This symptom had a significant correlation, particularly with *Pitta* cases (48.5%) and the *Vata - Pitta* type (66.7%), with a chi-square value of 29.4 ($p < 0.001$).

Excessive Sweating: This symptom did not show a

significant association, with a chi-square value of 5.9 ($p = 0.329$). The data on Insomnia across different *Sthana* of *Nadi* categories shows a significant variation. Insomnia was present in 100.0% of participants in the *Vata*, *Kapha*, *Pitta-Kapha*, and *Vata-Kapha* groups. It was also reported by 84.8% in the *Pitta* group and 47.6% in the *Vata-Pitta* group. The statistical analysis shows a significant association between insomnia and the *Sthana* of *Nadi*, with a chi-square value of 26.7 and a p -value of < 0.001 , indicating that this association is highly significant.

Dyspnoea: This symptom showed less prevalence across the *Doshic* types, reflected in the chi-square value of 6.7 ($p = 0.244$).

Tinnitus: The association was weaker, particularly with *Pitta - Kapha* types at 38.5%, leading to a chi-square value of 8.3 ($p = 0.139$). The data underscores a significant association between the *Sthana* of *Nadi* and various symptoms of *Raktagata Vata*, particularly highlighting the influence of the *Pitta Dosha* in relation to mental symptoms such as *Santapa* and *Ruja*. These findings can inform clinical practice, allowing practitioners to better understand symptom patterns and tailor interventions based on *Doshic* assessments.

Table – 29 Association of Gati of Nadi with Symptoms of Raktagata Vata

The association of the *Gati* of *Nadi* with symptoms of *Raktagata Vata* provides insightful correlations between the characteristics of the pulse and the manifestation of various clinical symptoms. By examining the different *Gati* types—*Sarpa*, *Manduka*, *Hansa*, *Sarpa-Manduka*, *Manduka -Hansa*, and *Sarpa-Hansa*—we can gain a deeper understanding of how these attributes reflect underlying health conditions.

Ruja (Shiro *Ruja*): This symptom showed a strong association with the *Sarpa* type, where 100% of cases reported it. Other *Gati* types also reflected its presence, with notable percentages in *Manduka* (39.4%), *Hansa* (100%), *Sarpa-Manduka* (100%), and *Sarpa-Hansa* (100%), leading to a chi-square value of 64.3 ($p < 0.001$). This indicates a significant correlation between Shiro *Ruja* and various *Gati* types, particularly *Sarpa*.

Santapa (Mansik *Santapa*): This mental distress symptom had a 100% occurrence in both *Manduka* and *Hansa* types. It was also significantly present in *Sarpa-Manduka* (90.5%) and *Pitta-Kapha* (92.3%), yielding a chi-square value of 55.4 ($p < 0.001$). The high association suggests that mental distress is prevalent among patients exhibiting specific *Gati* types.

Vivarnata: This symptom was reported in 28.6% of *Sarpa* cases and 27.3% of *Manduka* cases, with no reports in other *Gati* types, leading to a chi-square value of 18.5 ($p < 0.001$). This indicates a significant but limited correlation with *Sarpa* and *Manduka*.

Aruchi: Lack of appetite showed the highest prevalence in the *Manduka* group (48.5%) and *Sarpa-Manduka* group (66.7%), indicating a chi-square value of 29.4 ($p < 0.001$). This suggests a strong relationship between appetite loss and these *Gati* types.

Stambha: This symptom showed minimal correlation, with a chi-square value of 6.5 ($p = 0.258$), indicating a non-significant association across the *Gati* types.

Paad Daha: Occurring in 18.2% of *Manduka* cases, this symptom had a chi-square value of 12.9 ($p = 0.024$), suggesting a weaker but noteworthy association.

Bhrama: The symptom of dizziness was particularly notable in *Manduka-Hansa* types, where 76.2% of cases were reported, leading to a chi-square value of 33.9 ($p < 0.001$). This indicates a strong association of dizziness with this *Gati* type.

Shothaa (Pedal Edema): The *Sarpa-Hansa* type showed a significant prevalence at 100%, suggesting a strong correlation with this symptom, indicated by a chi-square value of 69.2 ($p < 0.001$).

Klama: This symptom of fatigue was primarily associated with *Manduka* type (48.5%) and *Sarpa-Manduka* (66.7%), leading to a chi-square value of 29.4 ($p < 0.001$), indicating a strong relationship.

Raktasrava: This symptom did not show significant associations, yielding a chi-square value of 4.1 ($p = 0.529$).

Spandana (Palpitation): This symptom was present in 48.5% of *Manduka* cases and 66.7% in *Sarpa-Manduka*, resulting in a chi-square value of 29.4 ($p < 0.001$), indicating a significant association.

Excessive Sweating: This symptom did not demonstrate a strong correlation, as reflected in a chi-square value of 5.9 ($p = 0.329$). The symptom of Insomnia across different *Gati* of *Nadi* categories shows notable differences. Insomnia was observed in 100.0% of participants in the *Sarpa*, *Hansa*, *Manduka-Hansa*, and *Sarpa-Hansa* groups. It was reported by 84.8% in the *Manduka* group and 47.6% in the *Sarpa-Manduka* group. The association between insomnia and the *Gati* of *Nadi* is statistically significant, with a chi-square value of 26.7 and a p-value of < 0.001 , indicating a strong correlation.

Dyspnoea: This symptom showed less prevalence across *Gati* types, reflected in the chi-square value of 6.7 ($p = 0.244$).

Tinnitus: The association was weaker, especially in *Manduka-Hansa* at 38.5%, leading to a chi-square value of 8.3 ($p = 0.139$).

The analysis indicates significant associations between the *Gati* of *Nadi* and the symptoms of *Raktagata Vata*,

particularly highlighting the role of *Manduka* and *Sarpa* types in relation to common symptoms such as *Shiro Ruja* and *Santapa*. Understanding these correlations can enhance clinical assessments and support personalized treatment approaches based on pulse characteristics.

Table – 30 Association of Guna of Nadi (Type A) with Symptoms of Raktagata Vata

The analysis of the *Guna* of *Nadi* Type A reveals notable findings, particularly with dyspnoea, where a significant association was established. Other symptoms like *Santapa*, *Ruja*, and *Aruchi* did not demonstrate strong associations with the *Guna* types. These insights can aid practitioners in understanding the pulse characteristics and their potential implications for diagnosing and treating *Raktagata Vata*.

Table – 31 Association of Guna of Nadi (Type B) with Symptoms of Raktagata Vata

Overall, the data reflects a diverse set of symptoms with varying significance levels in relation to *Guna* of *Nadi* Type B.

Table – 32 Association of Guna of Nadi (Type C) with Symptoms of Raktagata Vata

Overall, while various symptoms were prevalent in the study population, their associations with *Guna* of *Nadi* Type C did not demonstrate strong statistical significance.

Table – 33 Association of Guna of Nadi (Type D) with Symptoms of Raktagata Vata

Overall, the findings suggest a range of symptoms associated with *Guna* of *Nadi* Type D, yet the statistical significance of these associations remains largely unestablished.

Table – 34 Association of Guna of Nadi (Type E) with Symptoms of Raktagata Vata

Overall, the findings suggest a range of symptoms associated with *Guna* of *Nadi* Type D, yet the statistical significance of these associations remains largely unestablished.

Table – 35 Association of % Symptom Score of Raktagata Vata with Sthana of Nadi

The analysis of the association between the % Symptom Score of *Raktagata Vata* and the *Sthana* of *Nadi* reveals significant differences among the various *Nadi* domains. The mean % symptom score for individuals categorized under the *Vata Nadi* is 20.95 with a standard deviation (SD) of 15.12. In contrast, those classified under the *Pitta Nadi* exhibit a higher mean score of 30.91 with an SD of 16.57. The *Kapha* category shows a notably lower mean score of 13.33 with an SD of 0.00, indicating no variability among the subjects in this group.

Further examination of combined *Nadi* categories highlights that the *Vata-Pitta* group has the highest mean score at 39.05 with an SD of 15.10, suggesting a

pronounced symptom presence in this category. The *Pitta-Kapha* combination has a mean score of 15.64 with an SD of 9.60, while the *Vata-Kapha* group scores 17.14 with an SD of 7.56.

The ANOVA analysis conducted reveals a statistically significant difference in the % symptom scores across the *Nadi* categories, with an F-value of 9.58 and a p-value of <0.001. This indicates that the symptoms associated with *Raktagata Vata* vary significantly depending on the *Sthana* of *Nadi*, suggesting that different *Nadi* types may experience differing severities and types of symptoms. The significant findings emphasize the need for tailored approaches in the assessment and management of *Raktagata Vata* based on *Nadi* classification.

Table – 36 Association of % Symptom Score of *Raktagata Vata* with *Gati* of *Nadi*

The association between the % Symptom Score of *Raktagata Vata* and the *Gati* of *Nadi* demonstrates significant variation across different *Nadi* categories. In the *Sarpa* category, the mean % symptom score is recorded at 20.95 with a standard deviation (SD) of 15.12. This indicates a moderate level of symptom severity within this group. In contrast, the *Manduka* category presents a higher mean score of 30.91 with an SD of 16.57, suggesting a more pronounced symptom manifestation.

The *Hansa* category, however, exhibits a much lower mean score of 13.33 with an SD of 0.00, indicating no variability among the subjects within this group. This suggests that individuals categorized as *Hansa* may experience fewer symptoms related to *Raktagata Vata*.

Analyzing the combined categories, the *Sarpa-Manduka* group shows the highest mean % symptom score of 39.05 with an SD of 15.10, highlighting a significant symptom presence in this category. The *Manduka -Hansa* combination has a mean score of 15.64 with an SD of 9.60, while the *Sarpa-Hansa* group scores 17.14 with an SD of 7.56.

The ANOVA results reveal a statistically significant difference in the % symptom scores among the various *Gati* categories, with an F-value of 9.58 and a p-value of <0.001. This indicates that the symptom severity associated with *Raktagata Vata* varies significantly depending on the *Gati* of *Nadi*. The findings highlight the importance of considering *Nadi Gati* in assessing and managing *Raktagata Vata* symptoms, as different *Nadi* types may exhibit varying levels of symptom severity and types.

Table – 37 Association of % Symptom Score of *Raktagata Vata* with *Guna* of *Nadi*

The association between the % Symptom Score of *Raktagata Vata* and the *Guna* of *Nadi* reveals variations across different *Nadi* types, though these differences do not reach statistical significance.

For Type A *Guna* of *Nadi*, individuals with a *Laghu* classification exhibit a mean symptom score of 25.56 with a standard deviation (SD) of 15.87, while those classified as *Guru* report a slightly lower mean score of 25.38 (SD = 15.34). Notably, those identified as *Laghu* & *Guru* both show a higher mean symptom score of 30.37 (SD = 22.64). The ANOVA analysis yields an F-value of 0.36 and a p-value of 0.696, indicating no significant differences among these categories.

In Type B *Guna*, the *Kathina* group has a mean score of 23.91 (SD = 18.39), while the *Mridu* group shows a higher score of 28.67 (SD = 15.43). The combined *Kathina* & *Mridu* Both category reports a lower mean score of 22.22 (SD = 14.66). The ANOVA for this category results in an F-value of 1.49 and a p-value of 0.230, also suggesting no significant differences.

In Type C *Guna*, the *Sthula* category has a mean symptom score of 24.68 (SD = 16.58), while the *Sookshma* group exhibits a higher score of 31.25 (SD = 15.34). The combined category of *Sthula* & *Sookshma* Both scores 26.67 (SD = 15.07), with an ANOVA F-value of 1.08 and a value of 0.342, indicating no significant difference in symptom scores among these groups.

For Type D *Guna*, the *Snigdha* group has a mean score of 25.00 (SD = 15.93), while the *Ruksha* group reports a slightly higher mean of 28.00 (SD = 14.61). The combined *Snigdha* & *Ruksha* Both category shows a mean score of 29.17 (SD = 23.62). The ANOVA results yield an F-value of 0.43 and a p-value of 0.650, indicating no significant differences.

In Type E *Guna*, individuals classified as *Tikshna* have a mean score of 22.78 (SD = 12.88), compared to the *Manda* group, which has a mean of 26.76 (SD = 17.05). The combined group of *Tikshna* & *Manda* Both has a mean score of 28.57 (SD = 19.52). The ANOVA analysis shows an F-value of 0.63 and a p-value of 0.536, indicating no significant differences.

Overall, while there are variations in the % symptom scores across different *Guna* classifications of *Nadi*, the statistical analysis does not demonstrate significant associations. This suggests that other factors may contribute more prominently to the symptomatology of *Raktagata Vata* beyond the classifications of *Nadi Guna*.

CONCLUSION

From this clinical study it can be concluded that faulty lifestyle selection and stress a major role in causation of this disease on the basis of following observations.

The maximum patients i.e., 71% were of 30 – 60 years age group, 71% were male, 85% were Hindu, 36% female patients were house wife, 95% patients were married, 71% were uneducated, 58% was belong to middle class, 79% pts from urban area.

- Out of 100 patients, the maximum patients had i.e., 66% *Vata – Pitta deha prakriti*, 59% *raja* & 41 % *tama*, 67% were eat mixed diet, 47% were tea & coffee addicted, 83% were suffered from disturbed sleep pattern, 51% were suffered from anxiety The max no. of patients i.e., 52% had *Manda agni*, 46% suffered from irregular bowel habit, 54% had *madhyama koshttha*, 73% *madhyama sara*, 52% *madhyama samahanana*, 52% had *madhyama pramana*, 62% had *madhyama satamya*, 72% had *avara satva*, 52% had *madhyama aahar* shakti, 56% had *madhyama vyayama* shakti.

- The factor was found in max. patients as *Viharaja Nidana* was travelling on vehicle 66%, followed by veg sandharan & diwaswapana both i.e., 61%, atiprajagranand was 33% as a *manas Nidana* was *Krodha* 86% *chinta* 51% followed by *shoka* 33%

- *Pitta* pradhana *Dosha Dushti* was found in max.no. Of patients 33%.

- The maximum no. of patients 37% was not known about family history of this illness while 63% had positive family history On the basis of the study following conclusions were drawn for the sign-systems & biochemical profile:-

- *Mansik Santapa* (86%) and *Insomnia* (83%) was the most presented symptoms inpatients

- Maximum patients had their systolic blood pressure in the range of 141 – 150 & 151 – 160 mmHg i.e. 42 % & 44 % respectively.

- Maximum patients i.e. 80 % had their diastolic blood pressure in the range of 91 – 100 mmHg.

- 90 % patient had their pulse rate 60-100 beat/minute.

- Maximum no. of patient's i.e. 55 % had their S. cholesterol level between 200 – 250mg/dl. 95% patients had S. Tg level <260mg /dl. 38% patients had S.LDL level between 131 – 160 mg/dl and 37% patients had S. HDL level > 60mg /dl.

- All the above-mentioned features show dominance of *Vata* and *Pitta*. In given pathology *Vyana Vayu*, *Sadhaka Pitta*, *Avalambaka Kapha* is chiefly involved. As stated by *Aacharya Charaka*, physician should try to understand the nature of the disease (*Dosha*), the site of manifestation and etiological factors and then initiate the treatment *Ch.Su.18/44*. There is no need to give the definite name to each and every disease. Thus in case of hypertension it is essential to understand the nature of the disease rather than to give the name.

The association of Sthana of *Nadi* with the symptoms of *Rakta gata Vata* illustrates significant relationships between various *Doshic* types and the presence of specific symptoms. (*Ruja*, *Santap*, *Bhrama*, *Spandana*,

Insomnia, *Aruchi*, *Vivaranata Klama* and *Shotha*).

The analysis of symptoms across different *Nadi* Sthanas indicates how these traditional diagnostic methods correlate with clinical manifestations.

By using *NADI TARANGINI* it was observed that maximum expression of pulse was noted as per the dominancy of *Doshas* in their respective sites in diseased individuals as per thoughts of Indian system of medicine. This proves the scientific validity of concept of *Nadi Pariksha* in parlance to advanced medical technology which may became popular tool for the diagnosis as well as prognosis of disease.

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