

Assessment of *purishvaha srotas dushti* in the patients of *sandhigata vata* w.s.r. to serum calcium level: an observational study.

¹Chhangani Jaikrishna S., ²Rathod Chetana D.*, ³Garje Pramod F.

¹Guide and Associate Professor, ²PG Scholar, ³Professor and HOD

Department of Rognidan Evum Vikriti Vigyan, Shri Ayurved Mahavidyalaya,

Nagpur, Maharashtra, India

*Corresponding Author: - chetanarathod012@gmail.com

Abstract

Background -

Among the *Tridosha*, *Vata* plays an important role and is responsible for all the *cheshta*. *Sandhigata Vata* is 1st explained by *Acharya Charaka* as *Sandhigata Anil* and is a type of *Vatavyadhi* which disturbs the physical and mental health. *Sandhigata Vata* is the second most rheumatological problem with prevalence of 22-39% in India. In the intestine (*pakwashaya*) the smooth layer consists of Ca-Na (*Kala Purishdhara Saa Eva Asthidhara*) ion channel. The *pakwashaya* can be considered as a *sthan* of both *Purishdhara kala* and *Purishvaha srotas* and it is the *vishesh sthan* of *vata dosha*. Interference at *pakwashaya sthana*, ultimately act on *vata dosha* and this vitiated *vata dosha* may be responsible for *purishvaha srotas dushti*, impaired function of *purishdhara kala* (*Asthidhara kala*) and various *Vatavyadhi* and *Sandhigata vata* is

nothing but *Vatavyadhi*. In this, efforts will be taken to study imbalance in the Serum Calcium level w.s.r. to *Purishvaha Srotas Dushti Lakshanas* in *sandhigata vata* patients. **Objectives-** The present cross-sectional study was planned to assess the *purishvaha srotas dushti* in *sandhigata vata* patients w.s.r. to serum calcium level. **Methods-** Total 81 pre diagnosed patients of *sandhigata vata* fulfilling the inclusion and exclusion criteria were selected from OPD and IPD of *Pakwasa Samnawaya Rugnalaya, Nagpur* and *purishvaha srotas dushti* was assessed in *sandhigata vata* patient. **Results -** Out Of 81 Patients, *Kruchchhenaalpalpa malapravrithi* was present in 79 (97.57%) patients, in 64 (79.01%) patients hypocalcaemia was found. The p value was less than 0.05, *purishvaha srotas dushti* is significantly associated with serum calcium level. **Conclusion -** *Purishvaha srotas dushti* is present in

sandhigata vata and *purishvaha srotas dushti* is associated with serum calcium level in *sandhigata vata* patient.

Keywords- *vata, pakwashaya, purishvaha srotas, purishdhara kala, sandhigata vata, serum calcium level*

Introduction

Ayurveda is an ancient science of health promotion; disease prevention and treatment. It is a holistic science of medicine providing its service to mankind. The chief aim of *Ayurveda* is to promote health of healthy individual and secondary aim is to treat illness ^[1]. There are Three Doshas in our body. Altogether three Doshas, *Vayu* is *Ayu* and *Bala*, without *Vata* the other two *Doshas* are unable to work ^[2]. *Vata* is liable for all *chesta* and all diseases of old age. Important role of *vayu* in health. In *Ayurvedic Samhitas & Sangraha granthas*, the aetiopathogenesis, symptoms and treatment of *Sandhigata vata* is described under *Vatavyadhi*. *Sandhigata Vata* with prevalence of 22-39% in India ^[3] is that the commonest form of articular disease which limits everyday activities like walking, dressing, bathing etc thus making patient disabled /handicapped. *Sandhigata Vata* is responsible for early degenerative changes in bodily tissue. The *sthan* of *Vata dosha* is *Sarvasharir* and *vishesh sthan* is *Pakwashaya* ^[4]. *Vayu* which is produced within the *Pakwashaya* is *poshak Vayu*, nourishes *poshya Vayu* of the body ^[5]. Due to lifestyle changes, there is a formation of *vikrut Vata* which affects all *sthana* of *Vata dosha*, especially *asthi dhatu* ^[6]. As we all know *Pakwashaya* is one of the *mulasthan* of *purishvaha srotas* ^[7] and *pakwashaya* is additionally *vishesh sthana* of *vata dosha*. Interference at *pakwashaya sthan*, ultimately

act on *vata dosha* and this vitiated *vata dosha* is responsible for *purishvaha srotas dushti* and various *Vatavyadhi* and *Sandhigata vata* is nothing but *Vatavyadhi*. The calcium sodium ion channels, necessary for the motor functioning of the intestine, present in the smooth muscle layer in large intestine(*pakwashaya*) is considered as *purishdhara kala (Asthidhara kala)* of the *pakwashaya*. According to modern science the function of large intestine is mainly the formation, holding, proper excretion of stool (*Purishvaha srotas*) for appropriate time ^[8]. Of the total soluble calcium found in the entire intestinal tract, some 15% is found in the large intestine. Calcium that reaches the large intestine undergoes absorption there by both active and passive processes. About 15% of the dietary calcium is absorbed. About 200 mg of calcium is excreted in urine per 24 hrs. and remainder is recovered in faeces ^[9]. Any disruption at *pakwashaya* may affect serum calcium level, *purishvaha srotas* functioning. In this, efforts have taken to study *purishvaha srotas dushti* w.s.r. to serum calcium level in the *sandhigata vata* patient.

OBJECTIVE

1. To assess *purishvaha srotas dushti* in the patients of *sandhigata vata*.
2. To study the association of *Purishvaha Srotas dushti* and Serum Calcium level in *Sandhigata Vata*.

METHODS OF DATA COLLECTION –

Method Of Selection of Study Subject:

Patients – 81 pre diagnosed subjects of *sandhigata vata* were randomly selected from OPD and IPD of Pakwasa Samanwaya Rugnalaya, Shri Ayurved Mahavidyalaya, Nagpur irrespective of their gender,

occupation, religion and socioeconomic status and informed consent was taken.

Selection Criteria: Patients were selected on the basis of inclusion and exclusion criteria.

a) Inclusion Criteria:

1. pre-diagnosed patient of *Sandhigata Vata*.
2. Patient between age group of 30 year to 60 year will be selected for Study.
3. Patient who are willing to include them into the study.

b) Exclusion Criteria:

1. Patient suffering from fracture or dislocation/displacement of joint.
2. Patient suffering with bone TB or tumour, osteopenia.
3. *Sandhigata Vata* case as a complication of other diseases like obesity, *Vatarakta*, DM, Carcinoma, Parathyroid diseases etc.

Study design -Observational, Cross-sectional study

Material and methodology –

Relevant To Objective:

Patient was assessed on the basis of subjective and objective Parameter; relevant data was collected for analysis.

Pre-diagnosed patients of *Sandhigata Vata* were taken for the study. And examination of each patient for *Purishvaha Srotas Dushti* was done on the basis of whether the *lakshanas* present or absent and Serum calcium test of patient was done on same day.

A. Subjective Criteria:

Assessment parameter of *Purishvaha Srotas Dushti* on the basis of presence or absence of following *lakshanas*.

1. *Kruchchhenaalpalpa malapravriti* (KAA)
2. *Sashabda malapravriti* (SSBD)

3. *Sashool malapravriti* (SS)
4. *Atidrava malapravriti* (AD)
5. *Atigrathita malapravriti* (AG)
6. *Atibahu malapravriti* (AB)

Lakshana	Score
Absent	0
Present	1

B) Objective Criteria – Interpretation of serum calcium level

Hypocalcaemia	Less than 9mg/dL
Normal	9-11
Hypercalcemia	More than 11

MATERIAL - STUDY INSTRUMENT/ DATA COLLECTION TOOLS:

1. Case record format
2. Pathological Investigation – Serum calcium test
3. Laboratory equipment's-Semi Auto Analyzer – Model name- PRIMAN Model No. 250.

OBSERVATION AND RESULT

I. Demographic observation

In this study, age limit was between 30-40 yrs. Out of 81, 23 and 22 patients were from 40-50 yrs. and 30-40 yrs. of age group respectively. 36 patients were from 51-60 yrs. age group. Out of 81 patients, 61 (75.31%) were females and 20 (24.69%) were males. Out of 81 patients, 2 (2.47%) patients were from upper class, 13 (16.05%) patients were from lower class and 66 (81.48%) were from middle class. Out of 81 patients, 6 were farmers, 31 were housewives, 10 were government servants, 4 were retired from work, 26 were workers, 4 were tailors.

In this study, out of 81 patients *manya sandhi* was involved in 13 (16.05%)

patients, *ansa sandhi* in 15 (18.52) patients, *kurpar sandhi* was affected in 8 (9.88%) patients, *manibandh sandhi* was affected in 3 (3.70%) patients, *hastanguli sandhi* were affected in 9(11.11%) patients, *kati sandhi* was involved in 47 (58.02%) patients, *Janu sandhi* was affected in 52 (64.20%) patients, *gulph sandhi* in 9 (11.11%) patients and *parshni sandhi* was affected in 2(2.47%) patients and *padanguli sandhi* was affected in 2 (2.47%) patients.

II. Observation of *purishvaha srotas dushti*-

Out Of 81 Patients, *Kruchchhenaalpalpa malapravrithi* was present in 79 (97.57%) patients, *Sashabda malapravrithi* in

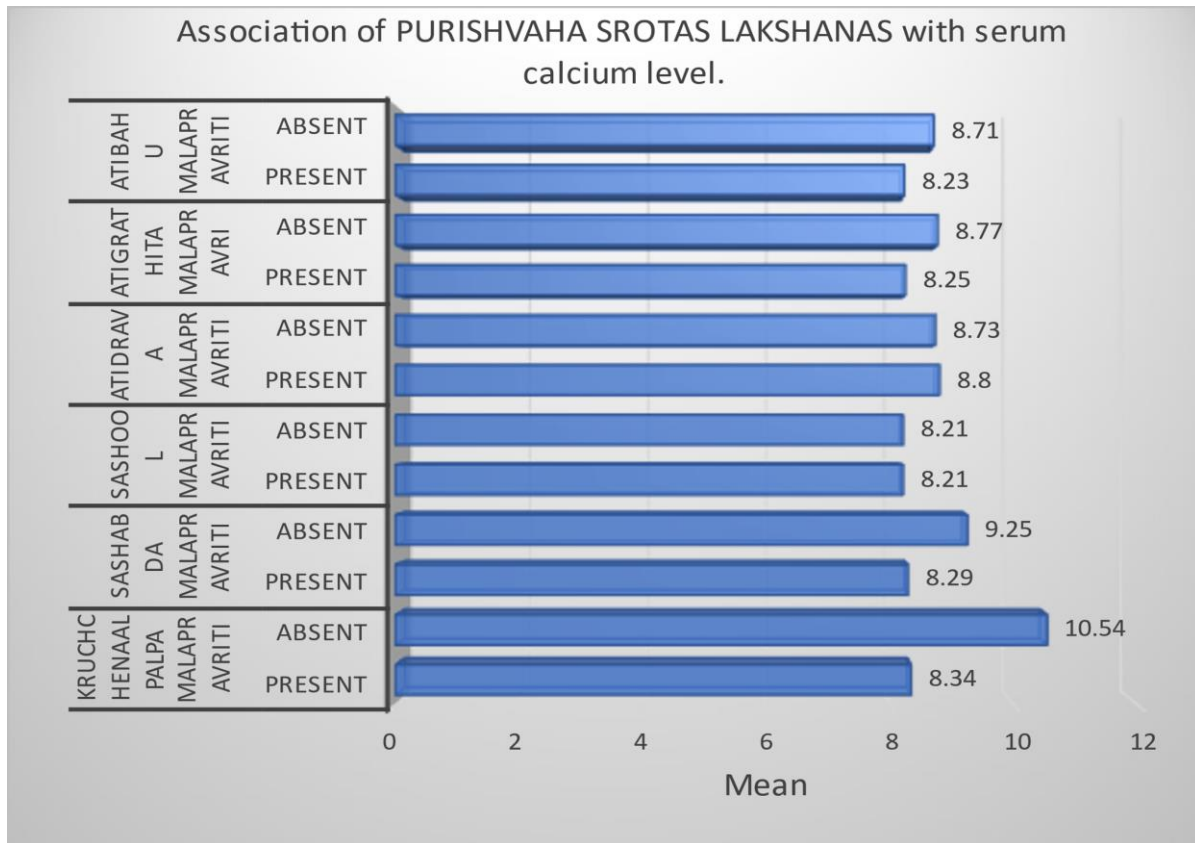
74(91.36%) patients, *Sashool malapravrithi* in 71(87.65%) patients, *atidrava malapravrithi* in 21 (25.93%) patients, *Atigrathita malapravrithi* in 58(71.60) patients, *Atibahu malapravrithi* in 27 (33.33%) patients.

III. Observation of serum calcium level-
Out of 81 patients, in 64 (79.01%) patients hypocalcaemia was found. normal serum calcium level was found in 13 (16.05%) patients. In 4(4.94%) patients hypercalcemia was found.

As value of p is less than 0.05, serum calcium compared between presence and absence of *purishvaha srotas dushti* lakshanas. Hence, it is concluded that *purishvaha srotas dushti* is significantly associated with serum calcium level.

Table no. 1 Association of *purishvaha srotas lakshanas* with serum calcium level.

	Status	Serum Calcium Level		p-value
		Mean	SD	
<i>Kruchchhenaalpalpa malapravrithi</i>	Present	8.34	0.98	0.0058,HS
	Absent	10.54	0.93	
<i>Sashabda malapravrithi</i>	Present	8.29	0.86	0.0018,HS
	Absent	9.25	1.79	
<i>Sashool malapravrithi</i>	Present	8.21	0.72	<0.0001,HS
	Absent	8.21	0.72	
<i>Atidrava malapravrithi</i>	Present	8.80	1.04	0.0314,S
	Absent	8.73	1.08	
<i>Atigrathita malapravrithi</i>	Present	8.25	1.04	0.0380,S
	Absent	8.77	0.86	
<i>Atibahu malapravrithi</i>	Present	8.23	1.02	0.0446,S
	Absent	8.71	0.18	



DISCUSSION:

The previous studies present are mainly regarding the aetiopathogenesis, *chikitsa* of *sandhigata vata*, *purish mala examination*, *mulasthanas* of *purishvaha srotas* (ayurvedic and modern view), importance of *purishdhara kala*. The improvements in serum calcium level after therapy brings symptomatic relief in *Sandhigata vata* therefore marked improvement in subjective parameters was observed in recent study. This can be attributed to the therapeutic benefits of therapy in *sandhigata vata* patients having low calcium level.

Now days, due to change in lifestyle, irregularity in daily routine, circumstances related to defecation are increasing that means *purishvaha srotas mulasthanas* (*pakwashaya*) is also getting affected. The *pakwashaya* is considered as the principal place of *vata*. The meaning of calling the *pakwashaya* a special place is that the *pakwashaya* is the place of origin of *Vatavyadhi*. *Vata* permeates the whole body and conducts its *Prakrit Karmas*. Here, if the *vata vikruti* is pacified, then the *Vata* disorder located anywhere in the whole gets pacified by itself. If *pakwashaya* gets affected there is a likely chance to cause

sandhigata vata and *purishvaha srotas dushti*.

1. In the present study, maximum Number of patients were females.
2. Majority of patients were having *sandhigata vata* symptoms involving *Janu sandhi* in 64.20% cases because it is a weight bearing joint followed by *Kati sandhi*.
3. The rükshta in pakwashaya due the vata prakopa resulted in difficulty in passing the stool (*Kruchchhenaalpalpa malapravritti*). It was observed largely in vridhdhavastha.
4. In present study, hypocalcaemia is present in 64 (79.01%) patients.
5. It is observed that *Purishvaha srotas dushti* is significantly associated with serum calcium level in *sandhigata vata*.

CONCLUSION

In *sandhigata vata*, due to vitiated *dosha*, the *sthana* of *vata dosha* i.e., *pakwashaya* gets disturbed producing *purishvaha srotas dushti lakshanas*. The absorption of calcium (*purishdhara kala*) gets affected resulting in decreased serum Calcium level. On the basis of 81 patients, study concluded that *Purishvaha srotas dushti* is present in *sandhigata vata* patients and *purishvaha srotas dushti* is associated with serum calcium in *sandhigata vata* patients.

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