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Understanding the etiopathogenesis of *Uttana Vatarakta* (peripheral vascular disease) - An Observational Study

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ABSTRACT

Advanced life style and changing food habits affects the activities of individual which leads to many diseases and Peripheral Vascular Diseases are one among them. They are characterized by reduction of blood flow and oxygen supply through peripheral vascular vessels. This can happen in arteries or veins. The incidence of Varicose vein is more common with age and high prevalence is after 30 years of life. PAD occurs in patients over 40 years old; the highest incidence occurs in the sixth and seventh decades of life and it affects 10-15% of the general population. The symptoms of *Uttana Vatarakta* owing to the *Margavarana* pathology simulate with the symptoms of Peripheral vascular diseases and some of the etiological factors of *Uttana Vatarakta* in the writing are specific in inclining Peripheral Vascular Diseases. Ayurveda emphasise the importance of study on etiopathogenesis of disease before the planning of treatment protocol. In this study an effort is done to identify the *Nidanas* and pattern of *Samprapti* in relation with Peripheral vascular diseases for the better understanding of different clinical presentations of *Uttana Vatarakta*.

Key words: *Uttana Vatarakta, Peripheral Vascular Diseases, Viruddhahara, Ayurveda.*

INTRODUCTION

Ayurveda is the oldest medical discipline in human history, and it aids in the prevention of illnesses as well as the promotion of health and longevity. In present revolutionary period, a person's life is frantic and materialistic. The majority of dietary choices, social order, way of life, and environment have changed with the flow of time. The culture of fast food, junk foods,

smoking, alcohol intake & drug addiction habits are spreading.

Advanced life style and changing food habits affects the activities of individual which leads to many diseases and Peripheral Vascular Diseases are one among them. They are characterized by reduction of blood flow and oxygen supply through peripheral vascular vessels. This can happen in arteries or veins. Obstructive Arterial diseases are characterized by symptoms like cold dry shiny skin with pallor or rubor, sharp stabbing type of pain, numbness and diminished or absence of pulse distal to obstruction where as in venous obstruction warm thickened skin with pigmented areas, itching, aching or cramping type of pain with dilated tortuous veins can be seen. The incidence of Varicose vein is more common with age and high prevalence is after 30 years of life.^[1] PAD occurs in patients over 40 years old; the highest incidence occurs in the sixth and seventh decades of life and it affects 10-15% of the general population.

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There is an increased prevalence of Peripheral atherosclerotic diseases in individuals with Diabetes mellitus, Hypercholesterolemia, Hypertension and in Cigarette smokers.^[2]

Vatarakta is a *Vatavyadhi* and is caused by the vitiation of *Vata* and *Rakta* by their own causative factors. Acharya Agnivesa explains the combination of *Vata* and *Rakta* is like *Agni* and *Marutha*. Because of its apparent chronicity, incurability, and consequences, *Vatarakta* possess a challenge to the physician. The regular consumption of *Viruddhahara*, especially *Lavana*, *Katu*, *Kshara*, *Ajirnahojana*, *Anupamamsa Sevana* by *Sukumara*, and *Viharas* like *Achankramana sheela*, *Vega dharana* and excess travelling leads to *Vatarakta*.^[3] Basic of its *Samprapti* includes *Margavarana* of *Vayu* by *Rakta*. In addition to this *Vatarakta* is also produced by *Margavarana* of *Vayu* by increased *Kapha* and *Medas* in *Rakta*. It has two stages based on the involvement of *Dhatu*s i.e., *Uttana* and *Gambhira avastha*. In *Uttana Vatarakta*, patient may present with *Kandu*, *Daha*, *Ruk*, *Toda* or *Sphurana* type of pain, *Ayama* and *Syava* or *Tamra Varnata* of *Twak*.^[4] In *Gambhira Vatarakta*, *Uttarottara Dhatu* gets affected. The symptoms of *Uttana Vatarakta* owing to the *Margavarana* pathology simulate with the symptoms of Peripheral vascular diseases and some of the etiological factors of *Uttana Vatarakta* in the writing are specific in inclining Peripheral Vascular Diseases.

Ayurveda emphasise the importance of study on etiopathogenesis of disease before the planning of treatment protocol. In this study, the *Nidana* and pattern of *Samprapti* are investigated in connection to Peripheral Vascular Diseases in order to gain a better knowledge of the various clinical manifestations of *Uttana Vatarakta*.

OBJECTIVES

1. To study the etiopathogenesis of *Uttana Vatarakta* with as explained in classics with special reference to Peripheral Vascular Diseases.
2. Review of the literature unravelling the clinical understanding of *Uttana Vatarakta* in relation to Peripheral Vascular Diseases.

MATERIALS AND METHODS

A minimum of 100 patients who were suffering from *Uttana vatarakta* between the age group of 20-70 years with the help of a structured case proforma which covering the *Nidanas* of *Uttana Vatarakta* along with the details of history taking, physical signs and symptoms as mentioned in our classics and allied science were selected.

Patients were analysed and selected accordingly who fulfils the diagnostic and inclusion criteria. Values obtained were assessed on the basis of percentage of gradation of individual parameters in relation with *Aharaja*, *Viharaja*, *Manasika* and *Vishesha Nidanas* of *Vatarakta*.

Diagnostic criteria

Diagnosis was made on the basis of *Lakshanas* of *Uttana Vatarakta* mainly *Kandu*, *Daha*, *Ruk*, *Toda* and *Sphurana* types of *Vedana Vishesha*, *Ayama* (*Sirayama*), and *Syava* or *Tamra varnata* of *Twak*.^[5]

Inclusion Criteria

1. Patients aged between 20 - 70 yrs.
2. Patients presenting with clinical manifestation of *Uttana Vatarakta*.
3. Patients presenting with symptoms of Arterial and Venous obstruction.
4. Patients with occupational varicosities.
5. Patients with primary symptoms of Varicose vein.

Exclusion criteria

1. Pregnancy induced varicosities.
2. Patients presenting with complications of varicose veins like thrombophlebitis, eczema, varicose ulcer, haemorrhage, periostitis and calcification.
3. Patients suffering from systemic diseases like SLE, Scleroderma and Gouty arthritis.
4. Patients suffering from congenital Varicose vein and Varicose vein due to muscular weakness.
5. Thromboangitis Obliterans and Atheroembolism with severe digital ischemia, trophic nail changes, painful ulceration and gangrene.

6. Varicose vein with DVT patients.

Assessment Criteria

Assessment will be based on the following parameters,

Subjective parameters

- Ruk (Intermittent claudication, Rest pain).
- Toda and Sphurana (Night cramps).
- Syava or Tamra Varnata (Discoloration of skin).
- Kandu (Itching).

Objective parameters

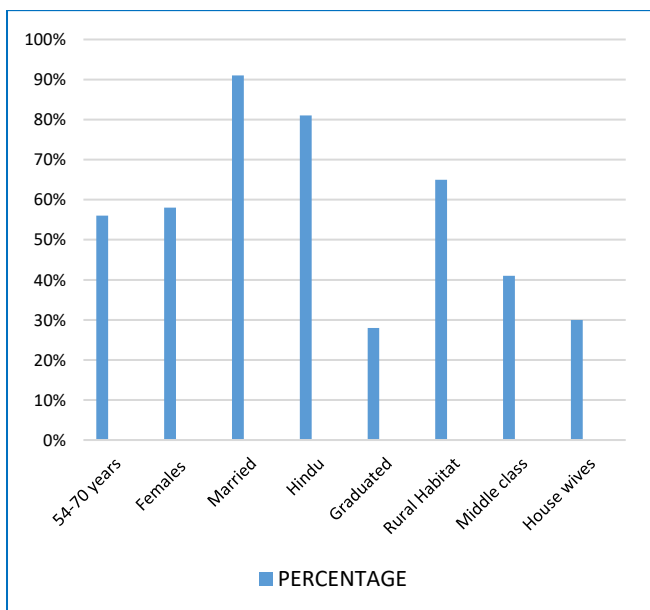
- Tortuous, dilated veins of lower limb.
- Absence of pulse distal to the obstruction.
- Physical examination (Buerger’s Test^[6] for arterial obstruction and Brodie’s Trendelenburg test^[7] for varicosities).

OBSERVATIONS AND RESULTS

On Demographic Data

Majority of the patients, 56% were belong to the age group of 54-70 years, 58% were Females, 91% were Married, 81% were Hindu, 28% were Graduated, 65% were belong to Rural Habitat, 41% were belong to Middle class family, 30% were belong to upper class, 30% were house wives.

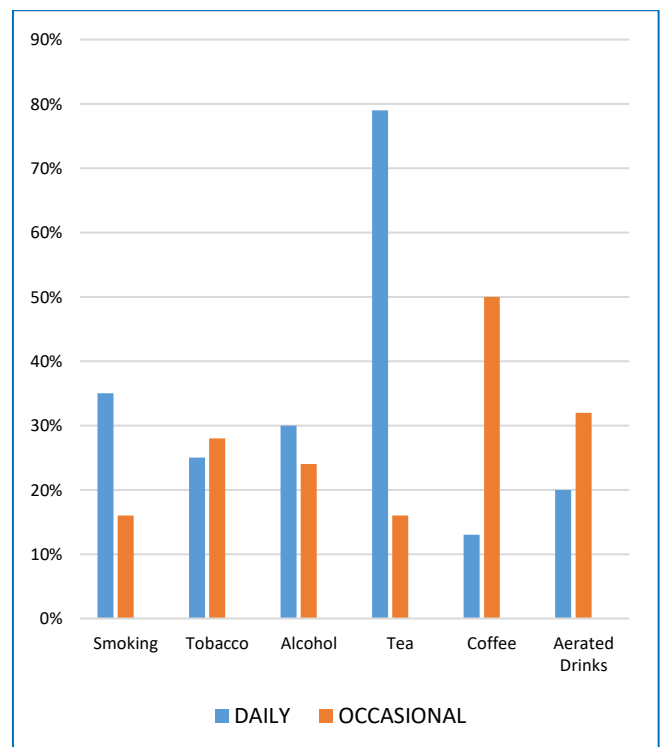
Fig. 1: Distribution according to Demographic Data



On Personal Data

Among 100 patients taken for the study, 35% have habit of Smoking daily and 16% have occasional habit of Smoking, 28% have occasional habit of using Tobacco and 25% have a habit of taking Tobacco daily, 30% have habit of consuming Alcohol daily, 24% have occasional habit of taking Alcohol, 79% have habit of taking Tea daily, 16% have occasional habit of Tea intake. 50% have occasional habit of taking Coffee, 13% have daily habit of consuming Coffee, 32% have occasional habit of consuming Aerated Drinks and 20% have a habit of taking Aerated Drinks daily. Highest incidence of PVD is seen in patients habituated to Mixed diet (64%). Screening of the patients as per Agni showed 48% of patients were having Vishamagni. Data obtained pertaining to Koshta of the patients shows highest incidence in the patients with Krura Koshta (48%). 51% were having Kalabhajana and Samashana, 48% were having Akalabhajana and 41% undergoes Vishamashana. In the distribution according to Nature of Work, it was found that 79% of the patients were involved in Walking, 72% in Standing. 57% had Disturbed Sleep. In this study, 55% having Regular Bowel Habit and 38% having Constipated Bowel Habit.

Fig. 2: Distribution according to Personal Data



On Data related to Disease**On Uttana Vatarakta Lakshana**

Among the 100 patients selected for study, about 88% of people had *Ruk* as a symptom, 86% had *Toda*, 85% had *Sirayama*, 82% had *Akunchana*, 64% had *Shyava* or *Tamra Twak*, 56% had *Daha*, 48% had *Gourava*, 44% had *Suptata*, 39% had *Kandu*, 37% had *Sphurana* and 33% had *Bheda*.

On Family History

58% of patients presented with a positive Family History.

On Dashavidha Pareeksha

Majority of patients in this study belonged to the *Vata Pitta Prakruti* (49%), 80% were having *Madhyama Samhanana*, 80% were of *Madhyama Pramana*, 77% had *Madhyama Satva*, 76% were having *Pravara Satmya*. Most of the patients showed *Madhyama Abhyavaharana Shakti* (76%) and *Madhyama Jarana Shakti* (78%) and 72% showed *Madhyama Vyayama Shakti*.

On Aharaja Nidana

Data obtained pertaining to *Kulattha*, highest incidence of patients 63% occasionally uses *Kulattha*, 42% occasionally consumes *Nishpava* and 9% daily consumes *Nishpava*. 65% of patients occasionally consumes *Mulaka*, 60% daily consumes *Masha* and 37% occasionally consumes *Masha*. 48% occasionally uses *Ikshu Rasa* and 4% daily uses *Ikshu Rasa*. 50% daily consumes *Dadhi* and 45% occasionally consumes *Dadhi*. Maximum number of patients occasionally consumes *Takra*, i.e., 50%. 93% daily consumes *Lavana Rasa*, 83% daily consumes *Amla Rasa* and 80% daily consumes *Katu Rasa*. 29% occasionally consumes *Kashaya Rasa* and 22% daily intakes *Kashaya Rasa*. 31% occasionally consumes *Snigdha Ahara* and 29% daily consumes *Snigdha Ahara*. 61% daily consumes *Ushna Ahara*, 49% occasionally consumes *Vidahi Ahara*. 50% consumes *Shushka Mamsa* occasionally, 10% consumes *Shushka Mamsa* daily. Most of the patients consuming *Ambuja Mamsa* daily (44%) and 21% consumes *Ambuja Mamsa* occasionally.

On Viharaja Nidanas

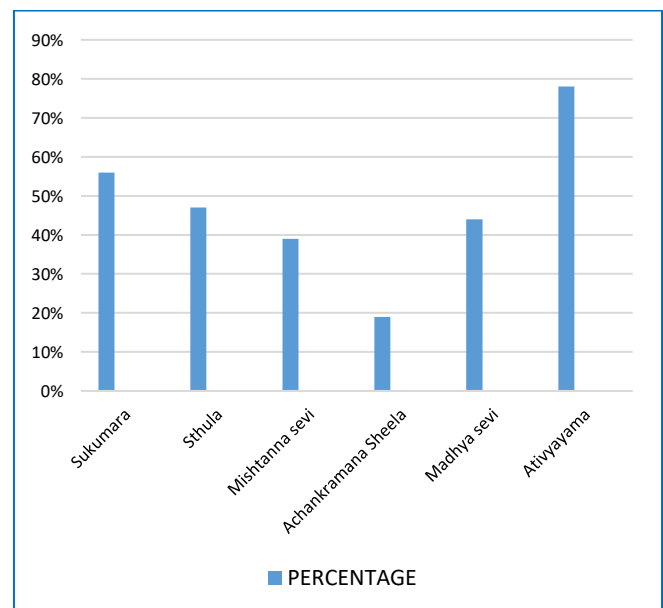
Data obtained pertaining to *Divaswapna* shows, 34% have habit of indulging *Divaswapna* daily and 31% have occasional habit of indulge in *Divaswapna*. 54% have occasional habit of *Ratrijagarana*. 57% indulges in *Vyavaya* occasionally. 64% of patients have a habit of *Veganigraha* occasionally. 40% indulged in *Atiadhvagamana* daily.

On Manasika Nidanas

Among 100 patients, 36% were get Short tempered occasionally and the rest 22% accepted they are of Short tempered. 34% of have some Worries occasionally and rest 21% have some sort of Worries daily. 50% are indulged in Over Thinking daily and 30% have indulged in Over Thinking occasionally.

On Vishesha Nidana of Vatarakta

In this study, 78% were involved in *Ativyayama*, 56% were *Sukumara*, 47% were *Sthula*, 44% were *Madhyasevi*, 39% were *Mishtannasevi* and 19% were involved in *Achankramana Sheela*.

Fig. 3: Distribution according to Vishesha Nidana**DISCUSSION**

Vatarakta is a condition, not only a malady, in which numerous systems are more prominently involved. It damages the musculoskeletal, vascular and integumentary systems. It has two stages based on the

involvement of *Dhatu* i.e., *Uttana* and *Gambhira avastha*. The symptoms of *Uttana Vatarakta* owing to the *Margavarana* pathology simulate with the symptoms of Peripheral Vascular Diseases and some of the etiological factors of *Uttana Vatarakta* in the writing are specific in inclining Peripheral Vascular Diseases. Characterization done on *Nidanas* like *Aharaja*, *Viharaja* and Familial inclination holds for *Uttana Vatarakta* as every one of them have its own task to carry out.

Discussion on demographic data

Significant part of the subjects associated with this study had a place with the age bunch of 54-70 years (56%) followed by group of 37-53 years (39%). Various researches conducted confirmed that the incidence of Varicose veins occurs in the middle age, i.e., 4th to 7th decades of life and Peripheral Arterial Diseases occurs in occurs in the sixth and seventh decades of life. That means the majority of the patients are in *Madhyama Vaya*, where *Pitta Dosha* predominates, ingestion of the *Nidana* described in the classics is more likely to result in *Pitta Prakopa*. As *Pitta* and *Rakta Dhatu* exist in *Asharya- Asharyi Sambandha*, *Dushana* of *Rakta Dhatu* occurs indirectly. Majority of the patients were Females. This corresponds to the widely held theory that the incidence of PVD is four times higher in women than in men. Hyperlipidaemia, diabetes, hypertension, a history of smoking, and obesity are all substantial risk factors for vascular disease in both men and women. After menopause, the prevalence of vascular disease rises in women. Oestrogen and progesterone hormones play an important role in fertility and menstruation. These hormones cause the muscle that control the movement of blood in the veins to relax. Continuous relaxation may affect blood flow and leading to pooling. Dominant part was married. This is because the patients between the age group of 20-70 years were chosen based on the inclusion criteria. Data obtained pertaining to the Religion of the patients shows highest incidence of PVD in Hindu Community, because of the Hindu dominated population in the area from where the patients were selected. Most of the study areas were Rural locality, so data showed highest incidence in Rural habitat. To explore the relationship

between education and the occurrence of disease, a larger sample size is required. Data obtained pertaining to occupation, shows higher incidence in House wives. House wives are habituated to stand for long hours in doing the domestic activities. Other professions observed in data were used to stand, walk and travel based on their nature of work. Venous hypertension is more common in persons who stand or walk constantly for lengthy periods of time, and the current study backs this up. Sitting, standing or travelling for long periods can cause increased venous pressure and damage to the valves in veins. Continuous activities will worsen the Peripheral Arterial Disease, because they result in hypoxia. Socio-Economic Status of the patients shows the highest incidence in the Middle-Class Family. People with a lack of health awareness, irregular eating habits, and active addiction along with heavy work load are more susceptible to the condition. 30% were belongs to Upper class. This group of people frequently consumes a high-calorie, high-fat diet. This will act as a risk factor for atherosclerosis and leads to PVD. In this study, most of the patients presented with a positive Family History. It is a known fact that Varicose veins have got a hereditary factor and the present study justifies the same. In the present study patients with Arterial Obstruction have got a negative familial history.

Discussion on Personal History

Cigarette smoking is known to be a major factor in hypoxia through fixation of carbon monoxide and nitric oxide to haemoglobin. Tobacco contains nicotine, which is a potent vasoconstrictor, it may have an effect directly on endothelial cells, causing hypercoagulability and thrombosis, and enhancing inflammatory changes in the vessels. Both will result in hypoxia and contribute to the symptoms of Arterial Obstructions. The various negative consequences of tobacco smoke are thought to be related to both direct oxidative damage to essential physiological components and the activation of phagocytic cells, which produces highly reactive oxygen species. Free radical production could potentially play a role in the endothelium damage and local inflammation that cause microvascular problems in venous insufficiency. *Madya* is having *Amla Rasa*,

Amla Vipaka and *Ushna Guna* hence causing *Pitta Dushti* and *Rakta Dushana*. Alcohol acts as a vasodilator at first intoxication levels, causing blood vessels to relax and expand. Regular uses of alcohol work as a vasoconstrictor, results in constriction of Arteries and leads PAD. Long-term Alcohol use will increase the blood pressure and in turn produce venous hypertension. Veins become engorged with blood more quickly, and the valves are unable to support the added strain. Veins loses all muscle tone and produces the unsightly appearance of Varicose vein. Tea and coffee contain caffeine, which dehydrates the body and causes blood vessels to contract, thus raising the blood pressure. So long term use of tea or coffee may lead to PVD. Aerated Drinks are carbonated drinks with added sugar. This has a negative impact on blood pressure and does vascular calcification which results in the manifestation of PVD. When drinking carbonated drinks carbon dioxide is converted in to carbonic acid. This will cause *Pitta Dushti* and in turn causes *Rakta Dushana*. So, there is a high chance of getting *Rakta pradoshaja vikara* including *Vatarakta*. The study subjects came to our OPD were habituated to Mixed diet. One of the *Nidana* described for the *Vatarakta* is excessive consumption of *Mamsa Ahara*. Non-vegetarian food contains more triglycerides. In PAD, a non-vegetarian diet is not suggested since it has a higher risk of causing atherosclerosis. Highly processed food with little fibre content may cause dehydration and constipation and this can put on pressure over veins leading to varicosities of lower extremities. Irregular food habit like *Akalabhojana*, *Vishamashana* is related to gastric symptoms like gas, bloating, etc. and further leads to *Vata Prakopa* and *Vilomagati* of *Vayu*. Screening of the patients as per *Agni* showed maximum of patients were having *Vishamagni*. It is due to *Akala Bhojana* and *Vishamashana*. *Vishamagni* will results in *Vataja Vikara*. Most of the patients were with *Krura Koshta*. It signifies *Uttana Vatarakta* is more prevalent in people with *Krura Koshta*. *Pakvashayagata Vatakopa* may be the reason behind this leads to *Vilomagati* of *Vata* taking *Stanasamsraya* in lower and upper extremities leading to PVD. More than half of the population had Disturbed Sleep due presence of rest pain in Arterial

Obstruction and Night cramps in Varicose veins. This is due to the increase in *Vata dosha* and will result the further increase in *Vata Dosha*. Dominant part of the patients was having Constipated Bowel Habit. Straining to have bowel movements can cause extra pressure on the veins of lower limb and can results in Varicose veins. Changes in intestinal microbiota by constipation can induce atherosclerosis and blood pressure rise in arteries may results in PAD.

Discussion on Data related to Disease

Discussion on *Uttana Vatarakta Lakshana*

In case of *Uttana Vatarakta*, *Kandu* results due to action of both *Vata* and *Rakta*. Itching in varicose vein is called as venous stasis dermatitis. Accumulation of blood in veins causes an increase in the pressure inside the veins. Blood began to leak out of the vessel to the surrounding tissues like skin in order to reduce the pressure. This will result in Venous stasis dermatitis. In Arterial obstruction itching is rare and sometimes occurs because of the cold dry skin. There is vitiation of *Rakta* in *Uttana Vatarakta*, which leads to *Sthanika Pitta Dosha Vrudhhi* in *Twacha*, which leads to *Lakshana* in the manner of *Daha*. Dilated-tortuous veins cause a localised rise in temperature, which manifests as a burning sensation on the skin. In arterial obstruction burning sensation occurs due to the disturbances in circulation. *Prakupita Vata Dosha* is primarily responsible for the manifestation of various types of pain, such as *Toda*, *Bheda* etc. Failure in the venous reflux will results in the pooling of blood in the veins and poor blood supply throughout the leg. Thus, the muscles are unable to relax and cramping will occur in case of Varicose veins. In Arterial obstruction, intermittent claudication is a main symptom. This pain is due to accumulation of excessive P substances in the muscle which are not absorbed properly due to inadequate blood supply. Arterial occlusion progresses, intermittent pain of the muscle will be supplanted by a continuous rest pain at the sites most distal of the arterial supply e.g., toes, foot, fingers, hand etc. this is called as Rest Pain, and is mainly due to ischaemic changes in the somatic nerves, so it is the cry of the dying nerves. *Vistara*, or dilatation, is

denoted by the term *Aayama*. In this case, *Aayama* should be understood as *Sira Aayama*, or vein dilatation. *Sankocha* in *Sira* in terms of tortuousness is caused by *Prakupita Vata Dosha's* action. *Rakta Dusthikara Nidana* raises *Kledamsha* in *Rakta Dhatu*, which results in *Sira Aayama*. In the context of *Upadhatu Pradoshaja Vikara*, Acharya Charaka says that vitiation of *Sira, Snayu, Kandara* causes *Sphurana, Sankocha*, and other maladies. And the aggravation of *Vata Dosha*, which vitiates *Rakta Dhatu*, will cause this *Sphurana*. In PVD, different types of *Vedana Visheshha* can be seen. The word *Kunchana* comes from the Sanskrit word *Kutilata*, which means "bending of the physical parts." *Kunchana* should be limited to *Dhamani Kunchana* or *Dhamani Sankocha* in the context of *Utthana Vatarakta*. Varicosity is characterised by elongated, dilated, and convoluted veins. *Shyava* or *Tamra Twak* or Change in colour of an ischaemic limb is a main feature of Arterial Obstruction. Congestion and purple-blue cyanosed appearance particularly in dependency is noticed in chronic arterial insufficiency. When the limb is elevated, it becomes pallor. Incompetence of venous valves Incompetence of venous valves responsible for stasis of blood and chronic ambulatory venous hypertension. So, there will be defective microcirculation. RBC diffuses into tissue planes and there is lysis of RBC's. this will result in the release of haemosiderin and finally results in the pigmentation of skin. *Suptata* is numbness occurs due to *Dushta Vata* which vitiates *Rakta Dhatu*. In Arterial obstruction numbness is result of lack of blood supply to the nerves and in venous insufficiency disturbances in the microcirculation results in Numbness. *Gourava* is a result of *Rakta Dushana*.

Discussion on Dashavidha Pariksha

Dwandwaja prakriti is more prevalent in society, the majority of patients in this study belonged to the *Vata Pitta Prakruti*. Acharyas have mentioned that *Prakruti*, of a person influences the disease that occur in that person. So, persons with *Vata- Pitta prakruti* will be more prone to *Vata- Pittaja Vikaras*. Since *Vata* and *Rakta* are involved in the *Samprapti* of *Vatarakta*, the persons with *Vata Pitta Prakruti* are more vulnerable

to this disease. Dominant was showed *Madhyama Sara*, which has apparently no effect on this study. *Madhyama Samhanana* predominancy may due to continuous *Dhatukshaya* which in turns leads to *Vata Prakopa*. Most of the patients showed *Madhyama Pramana*. Some studies concluded that Obese people are more prone to PVD. But here, owing to small sample size, conclusion could not be drawn. *Manasika Vikaras* like *Krodha, Shoka, Bhaya* and *Chinta* plays a role in the manifestation of *Uttana Vatarakta*, i.e., these all elements may lead to *Vata Prakopa* and *Rakta dushana* by *Pitta prakopa*. This study revealed that more than half of the population had *Madhyama Satva*. Dominant were having *Pravara Satmya*, because they were *Satmya* to *Sarva Rasa*. Predominancy of *Madhyama Abhyavaharana Shakti* and *Madhyama Jarana Shakti* was due to the involvement of *Vishamagni*. Maximum were showed *Madhyama Vyayama Shakti*. This data had apparently no effect on this study.

Discussion on Aharaja Nidanans

Kulatta is *Ushna Virya, Amla Vipaka*, and *Kaphavatahara*. Horse gram contains specific carbohydrate called raffinose oligosaccharides and alpha galactosyl derivatives of sucrose, they eventually ferment and causes accumulation of gas, discomfort pain etc., which may cause indigestion when used in large quantities. Thus, it will result in *Ajirната* and *Amlata* of *Ahara*. It will cause *Pittaprakopa*, thus it vitiates *Rakta Dhatu* hence acts as *Nidana* for *Uttana Vatarakta*. *Nishpava* is having *Madhura Rasa, Rukshna- Guru- Sara Guna, Ushna Virya* and *Amla Vipaka*. It is having *Vata- Pittakara* and *Vidahi* action. Its over use will cause *Vata Pitta Dushti* and thus in *Rakta Dushti*. *Mulaka* is *Guru, Ushna, Tikshna, Vishtambi, Aama Krut, Ushna Virya, Abhishyadhi*, and hence acts as *Tridoshakaraka*. Consumption of excess Radish will lead to dehydration due to its diuretic effect. Dehydration will worsen the condition like intermittent pain in PAD and cramps in Varicose vein. Dehydration can cause constipation and this will result in Varicose vein. Excess dehydration can cause *Vata Prakopa*. *Masha* is largely used in the form of *Idli, Dosa, Dal* and *Vada* etc. These fermented foods are *Vidahi* in

nature, they are difficult to digest and cause symptoms like frequent sour belching. As *Masha* possessing properties like *Guru- Snigdha Guna* and *Ushna Virya* causes *Kapha Pitta Prakopa*. These properties can result in *Shonita Pradoshaja Vyadhi* including *Vatarakta*. Sugarcane juice is *Vrushya, Shita, Sara, Snigdha, Brumhana* and having *Madhura Rasa*. It is *Sleshma Vardhaka*. Machine pressed juice causes burning sensation. It is having *Amla, Guru, Kshara, Vidahi* properties and thus it will cause *Pitta Dushti*. Sugar absorbs water and causes expansion of vein walls. Once blood sugar level normalizes, veins will contract back to their normal size. But, over time veins lose their elasticity and become more damaged. Damaged veins pump blood less efficiently, causing Varicose veins. *Dadhi* is *Abhishyandi, Guru, Ushna Virya, Amla Rasa, Pittavardhaka, Rakta-Pittakara, Shophakara* and *Tridosha Prakopaka*. It will result in *Rakta Abhishyandana* and finally *Srotolepa*. Curd and its products like paneer and cheese on regular consumption may result in weight gain leading to obesity. Obese people are more likely to have PVD. *Takra* is having *Madhura* and *Amla* as *Rasa* and *Kashaya* as *Anurasa*. It is having *Ushna Virya* and *Laghu Ruksha Guna*. Excess use of *Takra* will result in *Pitta* and *Vata Dushti*. *Lavana Rasa* or Salt added food like chips, snacks, pickles and dried fish, etc are predominant of *Lavana Rasa*. Salty food contains sodium that can cause the body to retain water. It can place more pressure on the veins by increasing the volume of fluids. It will result in the increase of blood pressure and thus results in PVD. *Amla Rasa* is *Pitta Vardhana*. It produces *Dhushana of Rakta* and hence causes *Uttana Vatarakta*. Sour fruits and foods contain acids for the most part, it accounts for the increased acidity in stomach and there by *Pitta Dushti*. It also increases *Kledata* in the body, there by leading to *Rakta Pradoshaja Vikara* like *Vatarakta*. *Katu Rasa* is *Ushna*. *Rakta dushana* and increases *Vata dosha*. The pungent taste is one of dry, intense heat that can be found in spicy foods. It is usually produced by resins, mustard glycosides and aromatic volatile oils that stimulate the tissues and nerve endings of the mouth with a sensation of sharp and fiery heat. Excess use of spicy food can trigger upper GIT, ends up in indigestion.

Spicy foods are also a main cause for heartburn. These factors will result in *Ama Utpatti* and *Pitta Dushti*. *Kashaya Rasa* is having *Ruksha* and *Sita Guna* and thus aggravates *Vata* in the body. Astringent food are water absorbent and there brings constipation and dryness of the body. Food items like Potato, Cauliflower, Green tea, Grapes, Unripe banana etc are predominant of *Kashaya Rasa*.

Snigdha Ahara will result in *Kapha Medo dushti*. Increase of *Kapha* and *Meda* in *Raktamarga* will result in the *Avarana* of *Vata* leads to *Uttana Vatarakta*. Studies shows that, *Snigdha Ahara* can result in hyperlipidaemia and atherosclerosis. This will act as a risk factor for PVD. *Snigdha Ahara* which are majorly observed in the study are fried items, *Dadhi, Ksheera* and bakery items. *Atisevana* of *Ushna Ahara* will result in *Pitta Prakopa*. *Vidahi Ahara* is *Dahajanaka* and *Pitta prakopaka* and its *Atisevana* result in *Uttana Vatarakta*. *Viruddhahara* act as *Maha abhishyandi* and will cause *Shonita pradushana*. Also results in the accumulation of *Kapha* and *Medas* in the *Srotas* leading to *Uttana Vatarakta*. *Shushka Mamsa* are *Vata Vardhaka*. *Ambuja Mamsa* or Fish meats are having *Guru-Ushna Guna* and *Madhura Vipaka*. It is also having *Snigdha Guna*. Over use of *Ambuja Mamsa* will result in the accumulation of *Kapha* and *Medas* in *Srotas* resulting in various diseases including *Uttana Vatarakta*. *Anupa Mamsa (Mamsa Ahara)* is *Pitta Vardhaka* and *Ushna Virya* and there by causes *Rakta Dushti*. They are also a high calorie diet which results in increase of *Kapha* and *Meda* in *Rakta*.

Discussion on Viharaja Nidanas

Acharya Charaka explains that *Diwaswapna* is contraindicated since it aggravates *Kapha* and *Pitta*. This could be a risk factor for the development of *Vatarakta*. Some studies showed that untimely sleep can alter circadian rhythms. Abnormal circadian rhythm is having a negative impact on circulatory system and people are more likely to develop vascular diseases. *Ratrijagarana* is a main *Nidana* for *Vataprakopa*. Lack of sleep effects the circulation by prompting the accumulation of fatty deposits in the blood vessels which is known as atherogenesis. Studies

showed that poor sleep will lead to an increase in neutrophils and in turn increases artery calcium level which results in atherosclerosis. Atherogenesis is a risk factor for PVDs. *Vyavaya* will cause *Shukradhatu Kshaya* and *Vata Prakopa*. *Vegadharana* causes *Apana Vata Vaigunya*. *Vegadharana* will result in the increase of blood pressure in the arteries and veins. Varicose veins are more common in people who stand or walk (*Atiadhagamana*) for long periods of time, according to the current study. Because continuous strenuous activities like walking result in hypoxia, they aggravate Peripheral Arterial Disease.

Discussion on Manasika Nidanas

Krodha originates from the *Rajo Guna* and vitiates *Vata* and *Pitta*. Emotions such as anger will ramp up the “fight or flight” response and increase the production of adrenalin and cortisol. This will cause the increase in blood pressure and constriction of blood vessels. *Shoka* is a mental state precipitated by *Rajo Dosha*. *Vata Dosha* aggravates first in *Shoka* followed by *Pitta Dosha* aggravation. Worries or anxiety disorders are more likely in causing increased blood pressure and narrowing of blood vessels. *Chinta* will aggravate *Vata Dosha*. Anxiety, irritability, low appetite, irregular sleep patterns and high blood pressure etc. are the negative outcomes of Overthinking.

Discussion on Vishesha Nidana

The *Nidanas* like excessive standing, walking etc. can be included under *Ativyayama*. Patients who have *Sukha Jeevana*, *Achankramana Sheela* and those who are *Mishtanna Sevi* leads a sedentary life style which will lead to *Ajirna* of *Ahara* in Patients and it will result in *Pitta Prakopa* or *Rakta Dushti* as they consume *Pitta Vardhaka Ahara*. *Sthoulya* is the result of *Santarpana Nidanas* and the chance of getting *Srotorodha* by *Kapha* and *Meda* is high in *Sthula*. Increased *Kapha* and *Meda* plays an important role in the pathogenesis of *Uttana Vatarakta*. According to Acharya Chakrapani the one who affected by disease from minimal *Nidana* comes under *Sukumara*. So, the affected population comes under *Sukumara*. Along with previously mentioned *Vata Prakopaka Ahara*, the above

mentioned *Viharas* acts as a triggering cause or *Vyanjaka Hetu* in the formation of *Vatarakta*.

CONCLUSION

Vatarakta, is a manifestation of *Prakupita Vata* and *Rakta* where the best depictions of *Margavarana* can be seen in the pathogenesis. *Prakupita Vata* is impeded by *Prakupita Rakta* in *Vatarakta*. As a result, *Gati* or *Chala Guna* of *Vata Dosha* get hampered. It is also occurred by the obstruction of *Vata* by increased *Kapha* and *Meda* in the *Raktamarga*. According to the current investigation, a fraction of the *Ahara*, *Vihara*, and *Manasika* variables listed in our classics will contribute as a *Nidana* for *Uttana Vatarakta*, coupled with familial propensity. In *Aharaja Nidana* - Excessive use of *Kulattha*, *Masha*, *Dadhi*, *Lavana*- *Amla*- *Katu Rasa*, *Ushna*- *Vidahi*- *Viruddha Ahara*, and *Ambuja-Anupa Mamsa Sevana* etc are the type of *Rakta Prakopaka Nidana* present in maximum number of patients which leads to Peripheral Vascular Diseases / *Uttana Vatarakta*. In *Viharaja Nidana* - *Divasswapna*, *Ratrijagarana*, *Vegadharana* and *Atiadhagamana* are the *Nidanas* present in maximum number of patients which leads to Peripheral Vascular Diseases / *Uttana Vatarakta*. *Manasika Nidanas* like *Krodha* *Shoka* and *Chinta* also plays an important role in the pathogenesis of Peripheral Vascular Diseases / *Uttana Vatarakta*. Certain habits like smoking, tobacco use, alcohol consumption and habit of taking aerated drinks are more connected with Peripheral Vascular Diseases / *Uttana Vatarakta*. *Ativyayama*, *Sukumara Sukha Jeevana*, *Mishtanna Sevana*, *Madhya sevana* and Habit of Smoking can be considered as the *Vishesha Nidana* for Peripheral Vascular Diseases / *Uttana Vatarakta*. *Ativyayama*, *Madhya Sevana*, Smoking Habit and *Manasika Nidanas* like *Shoka* and *Chinta* are the *Utpadaka Hetus* for Peripheral Vascular Diseases / *Uttana Vatarakta*. *Sukumara Sukha Jeevana*, *Sthula*, *Mishtanna Sevana*, and other *Aharaja Nidanas* can be considered as *Vyanjaka Hetu*.

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