

Protocol on an observational study to assess the predominance of Prakruti in patients with Stroke in Wardha City

Rishikesh A. Bhakare¹, Dr. Punam G. Sawarkar^{2*}

¹Final year student, Department of Panchakarma, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod (Hi), Wardha, Datta Meghe Institute of Medical Sciences, (Deemed to be University) Sawangi (Meghe), Wardha (MS)

^{2*}Associate Professor, Department of Panchakarma, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod (Hi), Wardha, Maharashtra, Datta Meghe Institute of Medical Sciences, (Deemed to be University) Sawangi (Meghe), Wardha (MS)

E mail id: drsuple.punam@gmail.com

ABSTRACT

Background: Stroke is a major condition that leads to death as well as temporary or permanent disabilities. In Ayurveda, Stroke is compared with Pakshaghata due to many similarities in clinical presentation, which is made up of two words, i.e., Paksha(Half part of the body) and Aghat(loss of function). Pakshaghata is a Vata Dosha dominant, usually having loss of function of half side of the body or having weakness of half side of the body, and there may be or may not be an involvement of the face. Prakruti is the nature or character of an individual, which forms by dosha during the union of sperm and ovum and remains the same throughout life. Therefore, according to Prakruti, lifestyle changes play an essential role in treating and preventing further stroke complications. **Aim** – Assessment of the predominance of Prakruti in patients with Stroke in Wardha city **Objectives** –The prime objectives of this study is to compare the prevalence rate of Stroke in different Prakruti in the population of Wardha city & create awareness in the population of Wardha city regarding complications of Stroke and its relation with Prakruti. **Materials & Methods:** It is a single observational study that will be conducted on over 100 patients who are suffered from Stroke with an assessment of Prakruti. **Observation &Results:** Observation will be noted & presented in tabular forms, and statistical analysis will be done. **Conclusion:** The higher predominance of Stroke is expected in Vata dominant as well as Vata-kaphaj Prakruti.

Keywords: Stroke, Ayurveda, Pakshaghata, Prakruti, Vata Dosha.

1. INTRODUCTION:

Stroke is a major condition that leads to death as well as temporary or permanent disabilities. It is the commonest neurological disorder, suggesting a major public health challenge to the population. It is the neurological deficit due to non-traumatic vascular cause, lasting greater than 24hrs or is interrupted by death within 24hrs and is evidenced by radiology (CT/MRI) [WHO]^[1]. It is also known as Cerebrovascular episode (CVE) or Cerebrovascular accident (CVA). As we know, the Brain is considered the president for controlling all motor activities. Hence, if there is a cerebrovascular episode, there will be the neurological deficit resulting in the production of loss of function or weakness in the half-sided body.

In Ayurveda, Stroke is compared with Pakshaghata due to many similarities in clinical presentation, which is made up of two words, i.e., Paksha(Half part of the body) and Aghat(loss of function). Pakshaghata is a Vata Dosha dominant, usually having loss of function of half side of the body or having weakness of half side of the body, and there may be or may not be an involvement of the face^[2]. There

are many textual references regarding Pakshaghata in ayurvedic literature where it is described precisely.

The overall prevalence of Stroke globally is 60%, and it is approximately 200 per 1,00,000 persons in India and 4.1% in Maharashtra [WSO; Global Stroke Fact Sheet;2019]. The prevalence of Stroke worldwide among males is about 52% and among females is about 48%[WSO; Global Stroke Fact Sheet;2019]. Stroke is directly responsible for 9.94% of all deaths and 24% of all disabilities in India. About 87% of all strokes are ischemic [WSO; Global Stroke Fact Sheet;2019]^[3,4].

Prakruti is the nature or character of an individual, which forms by Dosha during the union of sperm and ovum and remains the same throughout life^[5]. It is manifested in intrauterine life. Ayurveda plays a vital role in treating the individual with an individualized approach that makes every person distinct. Hence, every individual has unique physiological as well as pathological variations due to Prakruti. Therefore, according to Prakruti, lifestyle changes play an essential role in treating and preventing further stroke complications. The risk factors for Stroke are Hypertension, High body mass index (BMI), Impaired kidney function, Smoking, Alcoholism, Dyslipidemia, Diabetes Mellitus, Dietary habits, Atrial Fibrillation, Atherosclerosis of peripheral and central arteries, which may be fatal if not managed accordingly. In 95% of Stroke cases, the exact causes are still unknown, but it is believed to be due to environmental and genetic factors^[6].

1.1 Rationale of the Study :

In today's fast-paced computer age, Stroke is the burning issue leading to deaths and temporary or permanent disabilities. It originates from underlying diseases, faulty dietary habits, high BMI, etc. Hence, it is one of the most alarming health problems in India. Looking into its global incidence, its control has become the need of the current era. As the genetic factors are involved in the production of Stroke and Prakruti of each person remains the same from birth, there should be a main focus on the lifestyle changes. Hence, this study is planned for specific diet & lifestyle changes for stroke patients based upon Prakriti. It may be helpful to decide the pathology, pathological factors and provide a new approach for treatment protocol and hence, may also reduce the mortality rate.

2. Aim & Objectives of the study:

2.1 Aim:

Assessment of the predominance of Prakruti in patients with Stroke in Wardha city

2.2 Objectives:

1. To compare the prevalence rate of Stroke in different Prakruti in the population of Wardha city
2. To create awareness in the population of Wardha city regarding complications of Stroke and its relation with Prakruti.

3. MATERIAL AND METHODS

3.1 Study Design:

It is a cross-sectional observational study using a questionnaire sheet based on the personal interview of the eligible candidates of the study. The main focus of this study is to assess the predominance of Prakruti in patients with stroke in wardha city. Also the secondary objectives are to compare the prevalence rate of stroke in different Prakruti in the population of Wardha city and to create

awareness in the population of Wardha city regarding complications of Stroke and its relation with Prakruti.

3.2 Setting :

The source of this study's data will be from OPD & IPD of Panchakarma & Kayachikitsa of Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (Hi), Wardha Maharashtra, India. Data will be collected by personal interviews based on the Prakruti questionnaire case sheet.

3.3 Participants :

Patients having Stroke according to ICD-10 (ICD-10 Criteria I60-I63) and between age group 40-70 years, irrespective of gender and who are willing to participate will be recruited in this study. Patients are taking drugs causing altered sensorium viz. benzodiazepines, Trihexyphenidyl, Narcotics, etc.^[7], patients suffering from Atrial fibrillation, Meningitis, Cerebral malaria, Tuberculosis, etc. and Other causes of Stroke viz. Road Traffic Accident, Trauma, etc., and patients not willing to participate, will be excluded from this study.

3.4 Recruitment :

The recruitment of the participants will be done based on the eligibility criteria and all such participants will be informed about the study and the questionnaire sheet. Proper informed consent will be taken from the patients in their mother tongue. The patient's participation will be voluntary and no financial support will be given for this study. If there will be any query by the participants regarding the survey, it'll be resolve by the investigating researchers. All the essential information will be recorded, like name, age, sex, address, phone number, and email address, for any further requirement.

3.5 Data Collection :

Prakruti analysis will be done based on the specially designed questionnaire. The answers will be recorded in the case sheet. According to the assessed Prakruti, lifestyle modifications will be suggested to that patient.

3.6 Sample Size :

One hundred participants with complete questionnaires are required. It is expected a 5% incomplete questionnaire as a technical error.

3.7 Data Extraction, Management, and Statistical Methods :

Excel sheet will be made from the marked answers in the Prakruti questionnaire case sheet. All the data will be analyzed with the help of statistical experts by using the Chi-square test to assess the predominance of Prakruti in patients with Stroke. In windows, SPSS software will be used for all statistical analysis.

4. RESULTS & OBSERVATIONS:

The higher predominance of Stroke is expected in Vata dominant as well as Vata-kaphaj Prakruti. The observations and the result will be presented in tabular forms, and statistical analysis will be done.

5. DISCUSSION:

In today's fast pace computer age, Stroke is the burning issue leading to deaths and temporary or permanent disabilities. It is the commonest neurological disorder, suggesting a major public health challenge to the population. As it originates from the underlying diseases, faulty dietary habits, high BMI, etc. Hence, it is one of the most alarming health problems in India. Looking into its global incidence, its control has become the need of the current era. Stroke therapy and an antihypertensive therapy used in the modern sciences treat only the patient's emergency and symptomatically. But on the other hand, Ayurveda is the only science that treats the disease with its roots. Therefore, to attain and maintain a good life and health, stroke patients look towards Ayurveda for management purposes.

The Stroke is already described in ancient Ayurveda Samhita's in the heading of Pakshaghata. Although the exact cause of Stroke is unknown, the regular observations reveal that it is a multifactorial Vyadhi(Disease) involving environmental, biological, and genetic factors. In Ayurveda, it is referred to as Prakruti. Prakruti is the nature or character of an individual, which forms by Dosha during the union of sperm and ovum and remains the same throughout life. It is manifested in intrauterine life. In Ayurveda, it plays a vital role in treating the individual with an individualized approach.

Acharya Charaka said that all the Vata vitiating factors like dry, stale food, excessive strenuous work, excessive exercise, excess indulgence in sexual activities, suppuration of natural urges like flatus, feces, urine, etc. could be the reasons for Pakshaghata. Hence, Vata dominant as well as Vata-kaphaj Prakruti are at higher risk of getting Stroke in life. Further, he added the Samprapti (Pathogenesis) as by afflicting one side of the body, Vata causes diminution of the vessels and nerves to contract either one leg or one arm with aching piercing pain. That condition is to be known as Ekangaroga (monoplegia). If it affects the whole body called as Sarvangasana (quadriplegia). Symptoms will be Ruja (Pain), Vichetana (Loss of sensation), Hasta Padasankoch (Rigidity), Sandhibandavimoksha (Subluxation of joints), Vakstambha (Aphasia or Dysarthria), ChestanivruthiDakshina (Motor impairment). According to Acharya Charaka, Pakshaghat is a Kashta Sadhyavyadhi(Difficult to treat) or Asadhya (Incurable). Complications of Stroke are Lockjaw, Stiffness, Hump Back, Arthritis, Difficulty walking^[8,9,10].

The clinical conditions of Pakshaghata in Ayurveda, which can be correlated with Stroke from Modern science, are reviewed from different Ayurvedic Samhita's. With the review of Ayurvedic literature, it is evident that no specific etiological factor is described separately for Pakshaghata. So all factors vitiating Vata Dosha in the body are the main cause of Pakshaghata. Nidan explained that Vatadosha disorders in various Ayurvedic texts are classified systematically as below:

Aharajanya factors vitiating Vata Dosha include all factors related to diet, consumption, and quality of food materials that provoke Vata Dosha ^[11]. On the other hand, Viharajanya factors vitiating Vata Dosha consist of behavioral factors that provoke Vata Dosha ^[12]. Manasajanya factors that affects mind like Chinta, Shoka, Kama, Krodha, Bhaya etc. provoke Vata Dosha ^[13]. Abhighataj factors also vitiates Vata Dosha ^[14]. Seasonal variation, excessive purificatory measures, etc., are other miscellaneous factors vitiating Vata Dosha: It includes all other factors that provoke Vata Dosha^[15].

The treatment of Pakshaghata should be planned based on the type of Dosha involved in the pathogenesis, which helps counter the specific symptoms of the predominant Dosha. Specific dietetic and lifestyle modifications can be advised to the patient having specific Prakriti. The Vata predominant Prakriti can be considered as more susceptible to the development of such symptoms. Therefore,

preventative lifestyle guidelines can be prescribed to such patients to reduce the severity of the disease and enhance therapeutic outcomes.

Due to the faulty diet and sedentary lifestyle, there are high chances of developing hypertension, High body mass index (BMI), Impaired kidney function, Dyslipidemia, Diabetes Mellitus, Atrial Fibrillation and atherosclerosis of peripheral, central arteries which ultimately causes a stroke^[16]. As the genetic factors are involved in the production of Stroke and Prakruti of each person remains the same from birth, there should be a main focus on the lifestyle changes. So, to prevent the occurrence and recurrence of this disease, some dietary and lifestyle changes are essential. This makes every person a distinct entity. Hence, every individual has unique physiological as well as pathological variations due to Prakruti.[17]. On assessing the present literature, there is no published data regarding Stroke based on the Prakruti. Therefore, this study is planned for specific diet & lifestyle changes; according to Prakruti plays an essential role in treating and preventing further complications of Stroke[18-21]. It may provide a new approach for treatment protocol and may also reduce the mortality rate.

6. CONCLUSION:

The conclusion will be noted from the observations, and the result will be presented in tabular forms, and statistical analysis will be done. The higher predominance of Stroke is expected in Vata dominant as well as Vata-kaphaj Prakruti. So, to attain complication-free life and maintain good health, this study is planned for specific diet & lifestyle changes according to their Prakruti for stroke patients. It may provide a new approach for treatment protocol and may also reduce the mortality rate.

7. CONSENT :

The informed consent had been taken from the participants.

8. ETHICAL APPROVAL :

The approval of this cross-sectional study with letter no. MGACHRC/IEC/June-2021/248. is taken from the Institutional Ethical Committee of Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (Hi), Wardha.

9. COMPETING INTERESTS :

Authors have declared that no competing interests exist.

10. THE SOURCE OF SUPPORT RECEIVED: Datta Meghe Institute of Medical Sciences, (Deemed to be University) Sawangi (Meghe), Wardha (MS)

REFERENCES :

1. www.WHO.com; Global stroke fact sheet; 2019
2. Vaidya Yadavji Trivikramaji Acharya, editor. SutraSthana, Charaka Samhita of Agnivesha, Dridabala, Maharoga Adhyaya, Chapter 20, Verse 11. Chaukambha Prakashana, Varanasi 2013;P619
3. www.AHA.com; Guidelines for Stroke and heart disease
4. www.WSO.org; Global stroke fact sheet; 2019
5. Trivikram Yadav, editor. Sharirsthana, Sushruta Samhita, Garbhavyakarana, chapter 4, verse 78, 7th edition. Choukhamba Orientalia, Varanasi; 2002 P.362
6. www.strokecentre.com
7. Drkannayiramalagiakrishnan, CAWiens, An approach to drug-induced delirium in the elderly, Glenrose Hospital,10230, Edmonton; AB TSG OB7, Canada

8. Vaidya Yadavji Trivikramaji Acharya, editor. SutraSthana, Charaka Samhita of Agnivesha, Dridabala, Maharoga Adhyaya, Chapter 20, Verse 11. Chaukambha Prakashana, Varanasi 2013;P619
9. Vaidya Yadavji Trivikramaji Acharya, editor. Chikitsa Sthana, Charaka Samhita of Agnivesha, Dridabala, Vatavyadhi Chikitsitam Adhyaya, Chapter 28, Verse 53-55. Chaukambha Prakashana, Varanasi 2013;P619
10. Trivikram Yadav, editor. Sutrasthana, Sushruta Samhita, Shonita Varnaniya Adhyaya, Verse 55. Chaukhamba Surbharti, Varanasi 2008
11. Trivikram Yadav, editor. Nidanasthana, Sushruta Samhita, Vatavyadhi Nidana Adhyaya, Verse 13-19. Chaukhamba Surbharti, Varanasi 2008
12. Trivikram Yadav, editor. Chikitsa sthana, Sushruta Samhita, Mahavatavyadhi Adhyaya, Verse 19. Chaukhamba Surbharti, Varanasi 2008
13. Dr. Anna Moreshvara Kunte and Dr. Krishna Shastrynavare, editor. Sutra Sthana, Ashtanga Hridaya of Vagbhatacharya, Doshopakramaniya Adhyaya. Chapter 13, verse 17, Choukhamba Samskruta Samsthana, Varanasi 2010;P216
14. Harsh Mohan, Textbook of Pathology; chapter 28, 8th edition; 2018. Jaypee Brothers Medical publishers private Ltd.
15. Harrison's Principles of Internal Medicine, Chapter 420, edition 20th; McGraw-Hill, Fauci, and others; Medical publishing division, 2018; volume-2
16. Munjal YP API Textbook of medicine. Vol-2, 9th edition. New Delhi. Jaypee Brothers Medical Publishers (p) Ltd. 2012; P-1401.
17. Giri, D., Wairagade, S., Desai, P., Agrawal, A., Jha, R.K., 2020. Relation between Prakriti and stress handling capacity: An observational study. *International Journal of Current Research and Review* 12, 103–109. <https://doi.org/10.31782/IJCRR.2020.121512>
18. Jadhav, U., Chawla, D., Wagh, P., Ghewade, B., 2020b. A case of pulmonary tuberculosis with stroke: A rare presentation. *Journal of Datta Meghe Institute of Medical Sciences University* 15, 665–668. https://doi.org/10.4103/jdmimsu.jdmimsu_136_20
19. Khanna, S., Inamdar, A., Kumar, S., Basat, A.V., 2019. Study of serum uric acid levels in acute stroke. *International Journal of Pharmaceutical Research* 11, 2041–2044. <https://doi.org/10.31838/ijpr/2019.11.04.508>
20. Sahu, A., Naqvi, W.M., 2020a. Upper limb functional independence in subacute stroke patients: A study protocol investigating the impact of haptic enhanced virtual reality system. *Journal of Critical Reviews* 7, 446–451. <https://doi.org/10.31838/jcr.07.09.91>
21. Bawiskar, N., Kothari, N., Kumar, S., Acharya, S., Chaudhari, S.S., 2019. Clinico-radiological association of serum calcium, ionic calcium and albumin corrected serum calcium in acute ischaemic stroke. *International Journal of Pharmaceutical Research* 11, 1445–1448. <https://doi.org/10.31838/ijpr/2019.11.03.159>