



Research Article

AN OBSERVATIONAL STUDY TO VALIDATE THE SYMPTOMATOLOGY AND TO EVOLVE THE
DIAGNOSTIC METHODOLOGY OF *SIRAKKAMBA VATHAM* THROUGH *SIDDHA* DIAGNOSTIC TOOLS

Chithra L^{1*}, Christian G.J², Elansekaran S³, Ramamoorthy M⁴

*1P.G Alumini, ²Professor, ³Associate Professor, ⁴Lecturer, Department of Noi Naadal, National Institute of Siddha, Chennai.

ABSTRACT

Sirakkamba vatham is a clinical entity described by Sage Yugi in his treatise *Yugi Vaithiya Chinthamani*- 800, as one among the 80 types of *Vatha* diseases described in Siddha system of medicine. The study was aimed at in depth analysis of the clinical features mentioned under *Sirakkamba vatham* of *Siddha* literature and to evolve standard *Siddha* diagnostic methods for management for *Sirakkamba vatham*. This study was an observational, single center study with the sample size of 26, divided into Group I (control group) having normal individuals and group II (cases with *Sirakkamba vatham*). At the end of the study, it was concluded, that the symptoms of *Sirakkamba vatham* closely resembled the symptoms of Cerebro Vascular Accident especially of posterior circulation stroke.

KEYWORDS: *Sirakkamba vatham*, Cerebro vascular accident, *Siddha* diagnostic tools, stroke.

INTRODUCTION

“*Sirakkamba Vatham*” is one among the 80 *Vatha* ailments as described by Sage Yugi^[1]. Vitiated *Vatha* humor causes this disease^[2]. The manifestation of *Sirakambavatham* as described by Sage Yugi as blood circulation through constricted blood vessels of the neck leading to bilateral hearing impairment, weakness/Paresis of upper and lower limbs, altered consciousness or mental impairment, sighing, yawning, excessive sleep, tremor in head and head ache^[1]. Etiology, pathogenesis and clinical course of the diseases have been described by various *Siddhars* in their manuscripts. The environmental factors, climatic conditions, diet, physical activities, lifestyle changes and stress affect the equilibrium of three humors- *Vali*, *Azhal* and *Iyam* results in diseases. The clinical features of *Sirakkamba Vatham* closely resemble to the manifestation of cerebro vascular accidents in modern system of classification.

Cerebrovascular accident (CVA)

Stroke is a disturbance in brain function due to insufficient or complete loss of blood supply to an area of the brain due to prolonged hypertension, arteriosclerosis, and emboli. The lesion and clinical signs depend on the severity and location of the blockage in circulation^[3]. In India the cumulative incidence of stroke ranged from 105 to 152/100,000 persons per year, and the crude prevalence of stroke ranged from 44.29 to 559/100,000 persons in

different parts of the country during the past decade. These values were higher than those of high income countries^[4]. It is certain that the medical community has to make the most, in preventing the epidemic impact of strokes. Primary and secondary preventive strategies could reduce stroke incidence from 50 to 80%^[5].

The world today earnestly unfolds the scientific mystery that lies in indigenous medical system worldwide. In South India, *Siddha* system was propounded by the spiritual scientist. The *Siddha* system is one of the ancient sciences that took its privilege for the healthy and civilized way of life. The diagnostic methodology in *Siddha* system is unique as it made of purely on the basis of clinical acumen of the physician. The diagnosis is arrived from interrogation, inspection through eight-fold examination, wrist circumference sign, astrology and assessment of vitiating three humours, *Udal thathukal* and 96 principles. Hence it is certain for a *Siddha* physician to unravel the description of *Sirakkamba-vatham* a manifestation of stroke by its etiology, clinical features, prevention and management in various *Siddha* manuscripts and to protect the national health from the incidence of stroke.

MATERIALS AND METHODS

The study was approved by Institutional Ethics Committee, National Institute of Siddha (IEC IS) F.no. NIS/6-20/Res/IEC/10-11 Dt: 29.11.10

Criteria for Inclusion and Exclusion

The inclusion criteria consists of individuals with age group of 20–60 years of both male and female. Patient who fulfill any 4 out of 5 major criteria such as paresis or paralysis of upper limb and lower limb, deafness, history of tremor of head, history or complaints of headache, history or complaints of stupor or altered consciousness and 1 minor criterion such as hypersomnia, yawning and sighing were included in the study. The exclusion criteria consisted of patient with any other major illness such as brain tumor, lower motor neuron lesion, demyelination disorder, acute intra cranial hemorrhage, *Nadukku vatham* (Parkinson’s disease) and vulnerable group.

Study design

It was an observational, single centric study. The study on diagnostic methodology and symptomatology of *Sirakambavatham* (a manifestation of stroke) was conducted in Ayothidoss Pandhithar Hospital, National Institute of Siddha,

Clinical features

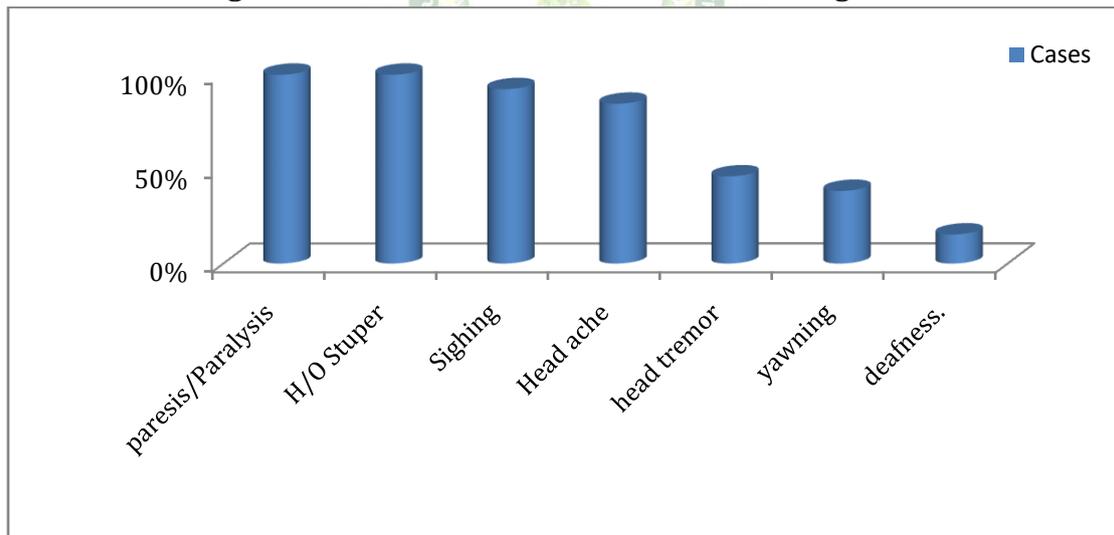
Chennai. The study was conducted during the period of Dec 2010 to Dec 2011. Eighty patients from Out Patient Department and In Patient Department of Ayothidoss Pandhithar Hospital, National Institute of Siddha are screened for the clinical features of *Sirakambavatham*. Among them 26 patients were recruited in the study. They were randomized into 2 groups. Group I was assigned as control group and healthy volunteers are recruited into this group. Group II consists of patients suffering from *Sirakkamba vatham*. Each group contained 13 patients.

RESULTS AND DISCUSSION

Age and Gender distribution

Among 13 patients, 92% of cases came under 34-60 years and 7% of cases came under 1-33 years. Among them, 92.4% of were male and 7.6% of cases were females. In the study, males are affected typically. In a population based study on the gender distribution of stroke it was found that gender distribution varied considerably between countries. Registries from China and India reported a vast majority of male patients (66% and 72%) respectively.^[6]

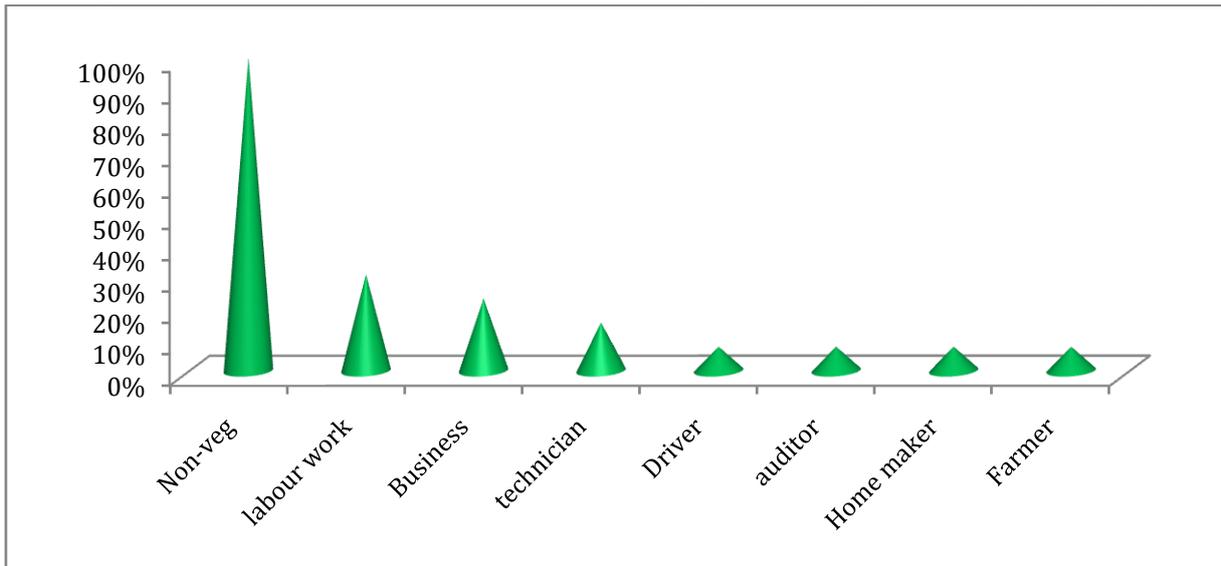
Figure 1: Distribution of clinical features among Cases



All the patients had paresis or paralysis of upper limb and lower limb of one side and history or complaints of stupor (Fig-1). Most of them had complaints of hyperventilation (sighing and yawning), head ache, hypersomnia and head tremor. Deafness was a rare feature among the patients. However, hyperventilation in the post stroke patient is considered to be common but is due to intrinsic pulmonary involvement.^[7]

Food Habits and Occupation

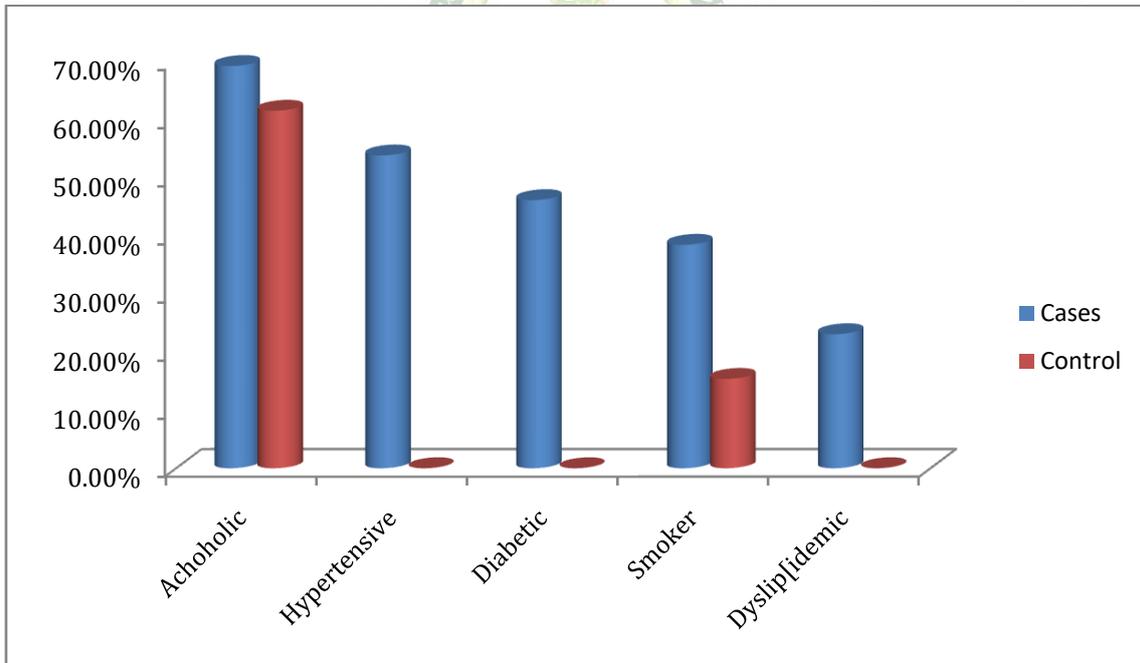
Figure 2: Distribution of Food habits and Occupation among the Cases (Group-II)



In this study, majority of the cases were labour, as the study was conducted in a government hospital (Fig-2). Both the categories have more physical and mental stress that affects the normal functions of the body. This may be due to the fact that lay people often mention stress as one of the most important risk factors for stroke. Stress might trigger a cerebrovascular event directly or could be associated with unfavorable lifestyle or high pressure.^[8]

Risk factors

Figure 3: Assessment of Risk Factors Among the Group-I (Controls) and Group-II (Cases)

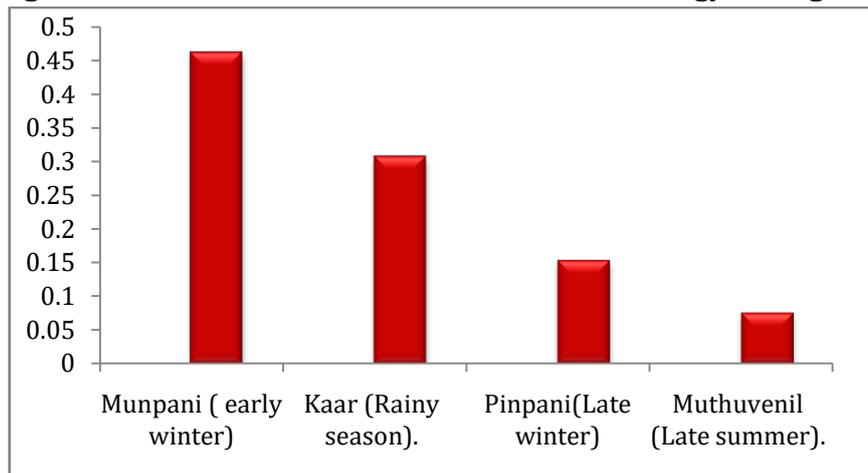


Udal vanmai

In group I, 53.8% of cases were in *Iyalbu nilai* (normal built), 7.6% of cases were *Vanmai nilai* (well built) and 38.4% of cases had *Melivu nilai* (lean). In group II, 61.53% were in *Iyalbu vanmai* (normal), 15.38% were in *Vanmai nilai* (well built) and 23.07% were in *Melivu nilai* (lean). Majority of the study patients and control group were of normal body built.

Seasonal variation and regional distribution

Figure 4: Seasonal Factor Associated with the Etiology among Cases



In this study, the frequency of occurrence of stroke was highest in early winter. Among 13 cases, 53.8% of participants were from *Neithal nilam* (Coastal region), 30.8% of cases were from *Marutha nilam* (cultivable land) and 15.4% of cases in *mullai nilam* (forest land). Most of the cases (53.8%) were from *Neithal nilam* (Coastal region). In another previous study to evaluate the seasonal variation in types of stroke it was found that the frequency of haemorrhagic stroke during winter (62.2%) was significantly greater than that during summer (37.6%) (Fig-3).^[9] The mechanisms underlying seasonal variation of strokes are not fully understood. The weather component factors could serve as a set-off factor for stroke. Among seasons, variation in temperature has been considered to be the most likely reason to influence the stroke incidence.^[10] Sustained higher level of blood pressure during the colder weather might be associated with increased risk of stroke occurrence.^[11]

Envagai Thervu (Eight fold examination)

Table 1: Tongue Examination of Group-I (Controls) and Group-II (Cases)

S.No	Examination of tongue	Group-I (Controls)	Group-II (Cases)
1.	Tongue Fissure	0%	7.69%
2.	Coated tongue	15.38%	30.76%
3.	Pale tongue	0%	61.53 %
4.	Bitter taste	30.76%	46.15%
5.	Sour taste	0%	38.46%
6.	Sweet taste	53.84%	7.69%
7.	Excessive salivation	0%	53.84%

Table 2: Eight fold Examination of Group-I (Controls) and Group-II (Cases)

S.No	Examination	Group-I (Controls)	Group-II (Cases)
1.	Body complexion (<i>Niram</i>)	Wheatish- 76.92%	Wheatish -84.61%
2.	Voice (<i>Mozhi</i>)		
	low pitch voice	-	53.84%
	normal pitched voice	100%	38.46 %
3.	Conjunctival colour (<i>Vizhi</i>)		
	Pallor		46.15 %
	Red	-	7.69 %
	Normal	100%	46.15%
	Normal Lacrimation	100%	100%
4.	Body temperature (<i>Sparisam</i>)		
	<i>Mitha veppam</i> (mild warm)	69.23%	46.15 %
	<i>Migu veppam</i> (Increased body heat)	7.69%	38.46%

	<i>Thatpam</i> (Cold)	23.07%	15.38%
5.	<i>Malam</i> (Stools) Constipation	15.38%	76.9%
6.	<i>Neerkuri</i> (Urine) Dark yellow colour	38.46%	23.07%
	Colourless	-	23.07%
	Cloudy urine	-	15.38%
	Light yellow colour	38.46%	
	<i>Neikuri</i>		
	Oil Spread Slowly	76.92%	61.53%
	Sieve like spread	-	15.38%
	Pearl shaped pattern	15.38%	-
	Snake like pattern	7.69%	-
	Hill like pattern	-	23.07

Pulse Examination

Naadi nithanam (Pulse strength) and *Naadi Panbu* (Character of pulse)

53.84% of cases and 61.53% of normal individuals had *Vanmai* (strong) character, 46.15% cases and 38.46% of normal individuals had *Menmai* (weak) character in *Naadi nithanam*. 38.46% of cases had *Paduththal Naadi* (lying state), 30.76% of cases showed *Kuthithal Naadi* (jumping pulse), 15.38% of cases showed *Munnokkul Naadi* (advance forward). 7.69% of cases had *Kalathal* (blending style) and *Puranadai* (feel of one humor in the place of other humor.) character in their *Naadi*. In control group, 61.53% of cases in control group had *Thannadai* (normal) character 23.07% had *Puranadai* character and 15.38% had *Kuthithal* character in *Naadi*.

The results of *Envagai thervu* (Eight fold examination) are given in Table-1 and Table-2. In an observational study on the association of low back pain and mid-line fissure in tongue it was found that the fissure in tongue is closely related to derangement of *Vatha* humour.^[12] This was further confirmed by the presence of bitter and sour tastes in the tongue which is a classical sign of increased *Vatham*. Sialorrhoea or excessive salivation which was observed in majority of stroke most commonly caused by poor oral and facial muscle control, which according to Siddha concept is also due to aggravated *Vatham*.^[13] The *Naadi thervu* (pulse) most of the patients had the vitiation of *Valiazhal Nadi*. Aggravated *Vatha* humour lead to the pathogenesis of the disease and deranges the other two humours (*Iyyam* and *Azhal*). In majority of the normal subjects *Vali naadi* is dominant but in *Thannadai panbu* (normal volume and rhythm) is the indicative of healthy individual.

Udal Thathukkal (Body Constituents)

Out of 13 cases, 100% of cases had vitiated *Saaram* (Chyle) and *Senneer* (blood). 84.61% of cases had vitiated *Oon* (muscle). 69.23% of cases had vitiated *Kozhuppu* (adipose tissue), 7.69% of cases had vitiated *Enbu* (bone). 7.69% of cases had vitiated *Moolai* (bone marrow). For all the normal individuals the *Udal thaathu* remain unaffected. Majority of the cases had vitiated *Saaram*, *Senneer*, *Oon*, and *Kozhuppu*. Realizing the phenotypes and exploring the role of genomics through targeted interventions by traditional systems may help disease prevention efforts. This will promote the personalized approach of preventive care via Siddha system of medicine.^[14]

Manikkadai Nool (Wrist Circumference)

Manikkadainool is one of a unique diagnostic tool in Siddha system with the procedure of measuring the wrist girth of a patient with an inelastic thread and expressing it in patient's own finger breadth units and interpreting a prognosis/diagnosis of a disease.^[15] Hence this procedure evaluates diagnostic and prognostic significance of *Manikkadainool* in Siddha system of medicine for *Sirakkambavatham* (stroke). In the wrist circummetric sign measurements, majority of cases in *Sirakkambavatham* lies between 8 to 9 fbs. For normal individual the sign varies from 7 $\frac{3}{4}$ to 10 fbs.

Examination of Nervous System

Out of 13 patients, facial nerve was affected in 53.84% of cases, oculomotor nerve was affected in 15.38% of cases and vestibulocochlear nerve was affected in 30.76% of cases. All the 13 cases had circumduction gait. Out of 13 case corneal and conjunctival reflex was absent in 2 cases and present in other 11 cases. Babinski's sign was extensor in all the 13 cases. Out of 13 cases, biceps, ankle and knee jerk was exaggerated in all cases, triceps jerk was

exaggerated in 12 cases, Supinator jerk was exaggerated in 11 cases and ankle clonus was elicited in 1 case. Out of 13 cases, for 2 cases coordination are

affected, two cases had dysdiadochokinesia and 3 patients had head tremor.

MRI/CT Brain Report

Table 3: Showing MRI/CT scan- brain of Group- II (Cases)

S.no	Age/sex	MRI/CT brain
1	40/m	Brain stem infarction
2	59/m	1. Ischemic lesions in pontomesencephalic junction. 2. Chronic lacunar infarcts in bilateral cerebral hemisphere 3. Right posterior inferior cerebellar artery infarct
3	49/m	Left lateral medullary infarct
4	38/m	Ischemic lesions in left dorsal mid brain
5	60/m	Brain stem hemorrhage
6	27/m	Occlusion of left basilar artery and middle cerebral artery
7	36/m	Right mid brain infarct
8	43/m	1. Right posterior cerebral artery infarct. 2. Hypodense lesions present in temporal, occipital lobe and thalamus
9	43/m	Infarction in thalamus and right cerebellar hemisphere
10	55/m	Infarction in right occipital region probably right PCA territory
11	58/m	1. Focal infarct in right brain stem 2. Old infarct in Ganglio capsular region
12	45/m	Massive infarct in occipital and temporal region
13	55/f	1. Infarction in Right cerebellar hemisphere in inferior posteromedial aspect 2. Right posterolateral medullary infarct 3. Right posterior cerebral artery infarct.

Sage Yugi quotes that, when blood passes through narrowed or constricted blood vessels in neck it causes blockages in the blood vessels of head and throughout the body. The forth coming features of *Sirakambavatham* suggest that these blood vessels may be carotid and vertebral arteries that supply blood to the brain. Narrowing of blood vessels may be due to atherosclerotic changes due to deposits of cholesterol.^[16] This observational study on *Sirakambavatham* has been symptomatically analysed to have a comparable entity with the Cerebro vascular accidents. According to Siddha, aggravated *Vatham* can manifest due to the obstructed flow or resistance to normal flow of *Vatham*. Among the three humors *Vatham* is considered to be a predominant entity due to its vital feature of flow (movement) along which the other two humors leading to the dysfunctioning of the body. Different types of *Vatha* move in different directions due to which a particular variety of *Vatha* may get obstructed by each other. *Praanan* and *Udaanan* naturally moves upwards, *Samaanan* spreads laterally and *Abaanan* have the tendency to move downwards. Hence among the observed 13 cases, for all the cases *Vyanan*, *Praanan* and

Samaanan are affected. For most of the cases had vitiated *Devadathan* (92.3%), *Kirukaran* (69.23%), *Uthaanan* (53.84%) *Abaanan* (46.15%), *Koorman* (38.46%). In the study, males are mostly affected about 92.4% by ratio, with the existence of risk factors such as smoking, alcoholism etc. Out of 13 cases, *Vatha Pitha yakkai* was 46.15%. Among the control group, 53.84% of cases had *Vatha pitha yakkai*. These factors along with imbalanced dietary regimen, mental stress provoke *Pitham* along with *kabam*. Occlusion of normal functioning of *Vata dosha* i.e., *Vatha prakobam* in turn deteriorates the functioning of the respective micro-channels of circulation which in turn alters the nutrient flow to the respective cells and tissues. As this pathology owes to continue in *Siram* (brain) it derives into a causative pathology of *Sirakambavatham*.

CONCLUSION

Through this observational study, the keen observation and inference of various Siddha diagnostic parameters like eight diagnostic tools, wrist circumference sign, vitiated humours and modern diagnostic parameters like blood and urine analysis and MRI/CT brain reports were done for a thorough study in *Sirakambavatham*. Thus, this study

validates the symptomatology and diagnostic methodology of *Sirakambavatham*. The patients with symptoms of *Sirakamba vatham* mentioned by *Yugi* conformed to majority of symptoms mentioned in the modern literature of Cerebro Vascular Accident with more association of posterior circulation stroke.

ACKNOWLEDGMENT

The author wishes to express her gratitude to the Director, National Institute of Siddha for providing infrastructural support and Prof. Dr.M.Logamanian MD(S) Ph.D – Former H.O.D, and all the faculties of Department of Noi naadal, National Institute of Siddha for their valuable suggestions and guidance.

REFERENCES

1. Dr. R. Thiyagarajan. *Yugi Vaithya Chindhamani* (Tamil), 2nd ed. Chennai: Department of Indian medicine and Homoeopathy, 2005
2. Dr.M.Shanmugavelu H.P.I.M. *Noinaadal noi mudhal naadal part-I* (Tamil). 3rd ed. Chennai: Department of Indian Medicine and Homoeopathy, 2003
3. Tadi P, Lui F. Acute Stroke (Cerebrovascular Accident) [Updated 2019 Aug 15]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK535369/>
4. Kamalakannan S, Gudlavalleti ASV, Gudlavalleti VSM, Goenka S, Kuper H. Incidence & prevalence of stroke in India: A systematic review. *Indian J Med Res.* 2017 Aug;146(2):175-185.
5. Lee JH Han SA YunYH et al. Posterior circulation Ischemic stroke in Korean population. *European journal of neurology* 2006;13;742-748.
6. Kaul S, Sunitha P, Suvarna A, Meena AK, Uma M, Reddy JM. Subtypes of Ischemic Stroke in a Metropolitan City of South India (One year data from a hospital based stroke registry) *Neurol India.* 2002; 50:S8-14.
7. R S Howard, A G Rudd, C D Wolfe, A J Williams. Pathophysiological and clinical aspects of breathing after stroke. *Postgrad Med J* 2001; 77: 700-702.
8. Thomas Truelsen, Naja Nielsen, Gudrun Boysen, Morten Gronbek, Self-Reported Stress and Risk of Stroke. *Stroke.* 2003; 34(4) 856-862.
9. Miah AH, Sutradhar SR, Ahmed S, Bhattacharjee M, Alam MK, Bari MA, Tariquzzama M, Mondol GD, Khan NA, Bari MS, Sarker CB. Mymensingh . Seasonal variation in types of stroke and its common risk factors. *Med J.* 2012 J; 21(1):13- 20.
10. Khaw KT. Temperature and cardiovascular mortality. *Lancet.* 1995; 345: 337-338.
11. MacMahon S, Peto R, Cutler J, Collins R, Rorlie P, Neaton J, Abbott R, Godwin J, Dyer A, Stamler J. Blood pressure, stroke, coronary heart disease. Part I: prolonged differences in blood pressure: prospective observational studies corrected for the regression dilution bias. *Lancet.*1990; 335: 765-774.
12. Saranya, G. J. Christian, S. Elansekaran, M. Ramamoorthy. An observational study on the association of low back pain and mid-line fissure in tongue. *World Journal of Pharmaceutical Research* 7(7) 1620-1627.
13. Neil G. Hockstein, Daniel S. Samadi, Kristin gendron, Steven D. Handler. Sialorrhea: A Management Challenge. *Am Fam Physician.* 2004 Jun 1; 69(11):2628-2635.
14. Kannan Muthiah, Kiruthiga Ganesan, Manickam Ponnaiah, Sathiyarajeswaran Parameswaran. Concepts of body constitution in traditional Siddha texts: A literature review
15. Sathyabama M, Raja lakshmi SP, Srinivasan V, Ramamurthy M, Kanniyakumari M, Christian GJ. Determination of diagnostic significance of wrist circumetric sign in Siddha system of medicine. *IJAPR,* 2017; 5(9).
16. Chithra L, Christian G.J. Elansekaran S, Ramamoorthy M. Validation of Siddha pathological concepts of sirakambavatham and its parallel analysis with cerebro vascular accidents (stroke). *IJAPR* 7(12); 2019.

Cite this article as:

Chithra L, Christian G.J, Elansekaran S, Ramamoorthy M. An Observational Study to Validate the Symptomatology and to Evolve the Diagnostic Methodology of Sirakkamba Vaatham Through Siddha Diagnostic Tools. *International Journal of Ayurveda and Pharma Research.* 2020;8(2):31-37.

Source of support: Nil, Conflict of interest: None Declared

*Address for correspondence

Dr. Chithra L

PG Alumini,
Department of Noi Naadal,
National Institute of Siddha,
Chennai

Email: sinka1108@gmail.com

Disclaimer: IJAPR is solely owned by Mahadev Publications - dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJAPR cannot accept any responsibility or liability for the articles content which are published. The views expressed in articles by our contributing authors are not necessarily those of IJAPR editor or editorial board members.