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A Cross-Sectional Observational Study on Patients with Stroke at A Tertiary Care Hospital

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Abstract

Background: Stroke is the most common cerebrovascular disorder and the third leading cause of death. It is a major cause of mortality worldwide and it most commonly occurs in geriatric patients. **Aim and objective:** To study the comorbidities in stroke patients and to study the prescribing pattern of drugs used in stroke patients. **Materials and methods:** A Cross-sectional observational study was conducted for 6 months in the Department of Medicine at a Government Medical College and Hospital, Nagapattinam. **Result:** Among 70 patients 56(80%) have identified as male and 14(20%) identified as female. The mean age of patients affecting by the stroke was 65±8.5years. Ischemic stroke (73%) was the commonest type of stroke in the study of the population with maximum involvement of the left limb and left hemiparesis. The most frequently occurring co-morbidity illness was Hypertension (66%) followed by Diabetes Mellitus (37%) Combination therapy (81%) (Aspirin + Clopidogrel) is highly used in treatment for stroke patients. **Conclusion:** Our study suggests life lifestyle changes for preventing cerebral stroke, including control of high blood pressure, diabetes mellitus, and lipids - Avoiding smoking and alcohol - Control overweight. Physiotherapy and better management of risk factors have a major effect on recovery from stroke with improved quality of life and symptoms.

Keywords
Aspirin, Clopidogrel, Hemiparesis, Ischemic Stroke, Single and combination therapy.

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INTRODUCTION:

Stroke is the most common cerebrovascular disorder and the second leading cause of death. [1] It is a major cause of mortality worldwide and it most commonly occurs in geriatric patients.[2] According to WHO Stroke is defined as a clinical syndrome consisting of quickly developing clinical signs of focal disturbance of cerebral function lasting more than 24 hours or mortality with a vascular origin but no other known cause.[3] Around 87% of strokes are ischemic, meaning that blood flow to the brain is disrupted. [4] Ischemic stroke is a sudden onset of focal, cerebral, spinal, and retinal dysfunction caused by infarction of central nervous system tissue. Specific, ally ischemic stroke comprises embolic infarct, thrombotic infarct and lacunar infarct. Haemorrhagic stroke is a sudden onset of focal, cerebral or spinal, dysfunction caused by intraparenchymal, intraventricular or subarachnoid haemorrhage (SAH). A transient ischemic attack is a transient event, where arterial obstruction in the brain resolves on its own without causing any tissue death.

[3] Comorbidity denotes the contemporary presence of at least two medical conditions in the same individual without necessarily having any connection to each other through the pathogenetic mechanism. The comorbidity disorders in stroke patients may produce significant prognostic disparities that cause patient outcomes and mortality statistics to be inaccurate since death may result from comorbid illness rather than from stroke alone. Thus, the comorbid conditions must be carefully considered when patients are arranged for therapeutic comparison and evaluation in medical research. Heart disease, hypertension, diabetes, mood disorder, chronic obstructive pulmonary disorder, and aspiration pneumonitis were investigated as potential comorbid conditions that are linked to the occurrence of stroke. [5] Mostly, ischemic stroke patients are recommended to receive stockings, good hydration, aspirin and early mobilization. Early mobilization will further decrease the risk of other complications including respiratory infection, urinary tract infection and bed sores. [6] Following medication and choosing healthy foods and drinks choosing healthy meals, keeping a healthy weight, get regular physical activity can help to prevent stroke. [7]

AIM AND OBJECTIVE:

1. To analyse the signs and symptoms in patients with stroke
2. To study comorbidity illness in stroke patients.
3. To analyse the prescribing pattern of drugs used in stroke patients.

MATERIALS AND METHODS:

It is a cross-sectional observational study conducted in the Department of Medicine at a Government Medical College and Hospital, Nagapattinam.

Duration of Study

6 months (April 2022 – September 2022)

Data collection

Data were collected from patient profile sheets using standard data collection forms. Data missing in the profile forms were collected from participants verbally. Data gathered included demographic details, past medical history, past medication history, family history, present illness, lab values, and CT report also the medication chart.

Inclusion criteria:

1. Patients above 18 years were included.
2. Both males and females were included.
3. Patients with identified and unidentified risk factors were included.
4. Patients taking complete treatment in GH were included

Exclusion criteria:

1. Patients of age <18 Years, pregnant/lactating women
2. Patients who are having a seriously debilitating condition like ESRD, HIV and Cancer

RESULT:

A total of 70 patients were identified with Stroke during the study at Government Medical College and Hospital, Nagapattinam. Among 70 patients 56(80%) have identified as male and 14(20%) identified as female.

Figure1[i]

The mean age of patients affecting by the stroke was 65±8.5years.

Table 1[ii]

Ischemic stroke (73%) was the commonest type of stroke in the study of the population with maximum involvement of the left limb and left hemiparesis.

Combination therapy (81%) (Aspirin + Clopidogrel) is highly used in treatment for stroke patients.

The most frequently occurring symptom among stroke patients in the study population was the weakness of the upper limb (60%) followed by weakness of the lower limb (54%) and followed by left hemiparesis (40%) and right hemiparesis (27%).

Table2[iii]

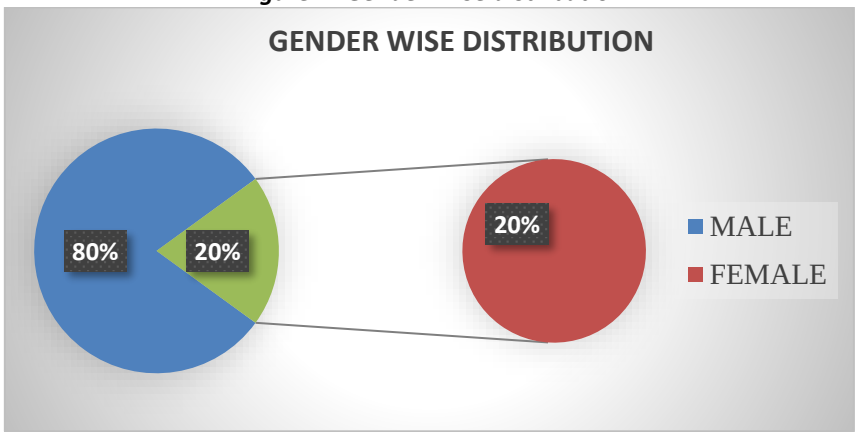
The most frequently occurring co-morbidity illness in patients with stroke in the study population was Hypertension (66%) followed by Diabetes Mellitus (37%) and followed by old cerebrovascular accident (25%).

Table3[iv]

The most commonly used category for the treatment of stroke is Anti-platelet (Aspirin 74.2%, Clopidogrel 45.7%) followed by Lipid-lowering agents (Atorvastatin 71.4%) followed by anti-hypertensive agents.

Table 4 and Figure 2[vvi]

[i]***Figure 1: Gender-wise distribution***



ii *Table1: Basic characteristics of the study population*

CHARACTERISTICS	NUMBER OF PATIENTS (n=70)		%
GENDER	Male	56	80
	Female	14	20
AGE	65 ± 7.5 years		
SOCIAL HABITS	Smoking	32	46
	Alcoholic	43	61
TYPES	Ischemic	51	73
	Haemorrhagic	15	21
	TIA	04	6
TYPE OF THERAPY	Single	13	19
	Combination	57	81

iii *Table2: Pattern of symptoms among stroke patients*

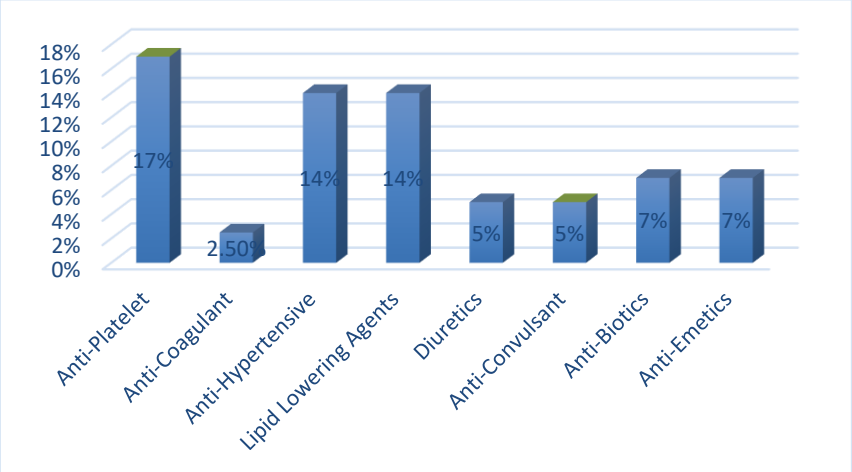
S. No	Symptoms	No of patients	Percentage
1	Weakness of upper limb	42	60%
2	Weakness of lower limb	38	54%
3	Left hemiparesis	31	44%
4	Right hemiparesis	19	27%
5	Facial palsy	12	17%
6	Giddiness	9	13%
7	Tingling sensation	1	1.4%
8	Deviation of mouth	13	18.5%
9	Headache	8	11.4%
10	Blurred vision	4	6%
11	Vomiting	9	13%
12	Inability to walk	11	16%
13	Slurred speech	28	40%
14	Seizure	4	11.4%

iv*Table3: Pattern of co-morbidities among stroke patients*

S. NO	CO-MORBIDITIES	NUMBER OF PATIENTS (n=70)	%
1	Hypertension	44	63%
2	Diabetes mellitus	26	37%
3	Hyperlipidemia	1	1.42%
4	Atherosclerosis	1	1.42%
5	Coronary artery disease	8	11.42%
6	Old cerebrovascular accident	18	25%
7	Seizures	5	7.14%
8	Aspiration Pneumonitis	9	13%

[v]*Table4: Prescribing pattern of drugs for stroke patients*

S.NO	CATEGORY	NAME OF THE DRUG	NUMBER OF PATIENTS (N=70)	PERCENTAGE
1	Anti-Platelet	Aspirin	52	74.2%
		Clopidogrel	32	45.7%
2	Anti-Hypertensive	Amlodipine	44	62.8%
		Enalapril	10	14.2%
		Nifedipine	8	11.4%
		carvedilol	1	1.4%
		Atenolol	2	2.8%
3	Anti-coagulant	Heparin	11	15.7%
		Low Molecular weight Heparin	1	1.4%
		Acitron	1	1.4%
4	Lipid Lowering Agent	Atorvastatin	50	71.4%
5.	Diuretics	Mannitol	17	24.2%
		Furosemide	8	11.4%
6	Anti-biotics	Cefotaxime	14	3%
		Ceftriaxone	9	2%
		Cephalexin	1	0.19%
		Metronidazole	5	1%
		Penicillin	1	0.19%
		Amoxyclav	1	0.19%
		Piptaz	1	0.19%
		C. Bactum	2	0.40%
		Azithromycin	1	0.10%
7	Anti-Convulsant	Phenytoin	13	2.57%
		Fosphenytoin	1	0.19%
		Sodium Valproate	5	0.99%
		Levetiracetam	5	0.99%
8	Anti-emetics	Ondansetron	31	6.15%
		Domperidone	1	0.19%
		Perinorm	2	0.40%



[1]**Figure 2: Category of drugs used in stroke patients.**

DISCUSSION:

Stroke is defined as a clinical syndrome consisting of quickly developing clinical signs of focal disturbance of cerebral function lasting further than 24 hours or mortality that has a vascular origin but no other known cause.

Males are highly susceptible to stroke compared with females. This may be due to risk factors and social habits. It showed in this study, the number of male patients was (80%) Comparatively more than the number of female patients (20%). Male predominance had also higher in the study of Sridhar Srimath Tirumala Konduru *et.al*., [8] and Mohammad Yaseen *et.al*., [9]

In this study, the maximum number of patients observed in the age group of 60-80 years was 59% and only 3% were below 40. This was significant in the study of Gargi Day, R Jyothi, Pratap, K Girish *et.al.* [1], Where patients in the age group 61-80 years Constituted 59% respectively.

After examining the subjects based on the types, it was found that the majority of the patients suffered from an ischemic (73%) followed by haemorrhagic (21%) and TIA (6%) which was by a study by Praveen Kothagundia, Kammill Radhika, *et.al.,* [9].

Out of the total patients (N=70), 60% presented upper limb weakness, 54% presented with lower limb weakness followed by 44% left hemiparesis and 27% right hemiparesis which was by Sridhar Srimath Tirumala Kondunu *et al.* [8]and Hitanshi P. Joshi *et al.* [10] and Sangram Vurumadla *et al.* [11]

The major comorbidities were identified as hypertension and diabetes mellitus which were seen in 63% and 37% respectively. Which was Significant to the study conducted by Abdel-Halim Hafez *et.al.,* [6]

Our study results show that majorly prescribed were combination therapy (81%) than Single therapy (19%). The combination of clopidogrel and aspirin causes a lower risk of major Ischemic events which was by the study by Lavanya s, Conducted Meet Shah *et al* [12] and proveen Kothagundla [9]

CONCLUSION:

Out of a total of 70 patients, the maximum number of cases were in the age group between 60-80years. The incidence of stroke was more common in males than females.

The majority of patients were diagnosed as ischemic (73%) than haemorrhagic (21.42%). The severity of stroke was based on risk factors such as smoking and alcohol. Hypertension and diabetes mellitus were the major comorbidities.

The most commonly prescribed drugs were Antiplatelet, lipid-lowering agents and anti-coagulants, which are most effectively utilized in our hospital.

Our study concludes that lifestyle changes is important management for preventing cerebral stroke including - Control of high blood pressure, diabetes mellitus and lipids - Avoiding smoking and alcohol - Control overweight. Physiotherapy and better management of risk factors have a major effect on recovery from stroke with improved quality of life and symptoms.

CONFLICT OF INTEREST:

The authors declare no conflict of interest.

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REFERENCE:

1. Gargi dey, r jyothi, c Pradeep, k Girish A prospective observational study on prescribing pattern and outcome of acute stroke from a tertiary hospital in Aluru, India. Bengaluru, care Journal of Clinical and diagnostic research.2022 Jun, vol-16(6) Doi: 10.7860/jcdr /2022 /52988.16484
2. Mohammad yaseen abbasi, md avez ali. Prescribing patterns of drugs in stroke patients: a prospective study archives of pharmacy practice vol.3, issue 4, oct-dec 2012 Doi: 10.4103/2045-080x.106253
3. Hussainy Syed areefulla, habeeb madiha, Geelani Ayesha, sultana sumaiya, meeran mohd mohiuddin. A prospective observational study on risk factors and prescribing patterns of drugs used in stroke patients at tertiary care teaching hospital Journal of drug delivery and Therapeutics. 2020; 10(5-s): 71-75 http://dx.doi.org/10.22270/jddt.v1015- s4469
4. K. Soumya lakshmi, Dr. Siddarma Study of symptoms. Risk Factors and prescribing patterns in stroke patients Indo-American Journal of pharmaceutical research, 2018 vol 8 issue 07, 2018 ISSN no: 2231 – 6876
5. Abdel-halim hafez elamy, ashfaq shuaib, keumhee c. Carriere, thomas jeerakathil. Common comorbidities of stroke in the Canadian population The Canadian Journal of neurological sciences inc2020; 47: 314-319 Doi: 10.1017 | cjn.2020.17
6. https://www.ncbi.nlm.nih.gov/pmc/articles/pmc1071073/
7. Https://www.cdc.gov/ stroke /signs symptoms.htm
8. Sridhar srimath tirumala konduru, amit ranjan, jyothi sri nallajerla, sravya gonuguntala. Study of symptoms, risk factors, and prescribing patterns in cerebral stroke

patients. Indian Journal of pharmacy practice, vol 10, issue 1, Jan-mar, 2017. dol: 10.55301jopp.10.1.6

9. Proveen kotha gundla, et al. Assessment of prescribing patterns and health-related quality of life in cerebral stroke patients. International Journal of pharmaceutical science review and Research. 69 (1), July-august 2021 Doi: 10.47583/ijpsnn. 2021. V69: 01.030.
10. Hitanshi p. Joshi, Radha bhattad, ashok k. Shyam, parag k. Sancheti Awareness of risk factors and early signs of the high-risk population of the Pune region. International Journal of community medicine and public stroke health/March 2022/ vol 9/ issue 3 Doi: https: //dx.doi.org/10.18203/2394-6040.ijcmph20220691
11. Sangram Vurumadla, rakshith v, Murari ch, venkateshwarlu k. A study on symptoms, risk factors and prescribing patterns of drugs used in stroke patients; International Journal of Pharmacy and pharmaceutical science, vol 7, issue 1.
12. Lavanyas, meet shah, yama thakkar, vyoma patel. A prospective study of prescribing pattern in the Management of Stroke at a tertiary care hospital international journal of innovative science and research technology volume 6, issue 12, December-2021.