

An Observational Retrospective Study on Prescribing Pattern of Drugs and Risk Factors in Stroke Patients

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Abstract

Background: According to WHO, Cerebrovascular accident is the rapidly developed clinical signs of focal disturbance of cerebral function.

Objectives: The main objective is to analyze the prescribing patterns of drugs for stroke patients and to study the different risk factors and co-morbidities associated with stroke patients.

Methods: A retrospective study was conducted at Government District Headquarter Medical College hospital, Nagapattinam over a period of 6 months. 75 patient were included in this study based on inclusion and exclusion criteria. Drug prescribed along with risk factor and co-morbidities were analyzed.

Results: In this study, total 75 prescriptions were examined. Male 83% are predominantly higher than female 17% and 88% of patient were diagnosed as ischemic stroke and 12% of patient were diagnosed as Hemorrhagic stroke. The majority of patient had a risk factor of hypertension 50%, DM 17 %, Epilepsy 17%, Alcoholic 17%, Smoking 9%. In this study of prescription pattern of drugs in stroke patients, Antihypertensive were frequently used therapy followed by lipid lowering agents, antiplatelet, vitamin supplement. Some other classes of drugs were prescribed for co-morbidities such as H₂ receptor blockers, antibiotics, antidiabetic agents, anticonvulsant, laxatives, antiemetic. In anticoagulant, heparin only used in our hospital.

Conclusion: The present study shows that early diagnosis and management for stroke is vital for survival. And then need of non-pharmacotherapy counseling for patients to prevent complications. And it also indicates the need to identify risk factors and creating awareness among the patients by a pharmacist in reducing the overload of disease and prescribing pattern of drugs based on therapeutic guidelines

Key words: Hypertension, Ischemic stroke, Hemorrhagic stroke, Risk factors

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I. Introduction

The medical term for stroke is cerebrovascular accident. In 1970, the World Health Organization defined stroke as " fleetly developed clinical signs of focal (or global) disturbance of cerebral function, lasting further than 24 hours or leading to death, with no apparent cause other than of vascular origin". Blood vessels that carry blood to the brain from the heart are called arterial. The brain needs a constant blood force for proper function. A stroke occurs when one of the arterial to the brain is either blocked or bursts. As a result, part of brain doesn't take enough blood force so, it starts to die.

According to WHO

Stroke was the second leading cause of death universally and responsible for roughly 11 of total death, individually. It estimated that stroke reckoned for 5.7 million deaths and 16 million first-time events in 2005 and these figures may reach 7.8 million and 23 million by 2030, individually. In India, the burden of stroke is accelerating day by day. Now, stroke is the fourth leading cause of death and fifth leading cause of disability in India. Grounded on recent population studies, the estimated prevalence rate of stroke is 84-262/100, in rural and 334-424/100, in urban areas. The incidence rate is 119-145/100.

The two major types of stroke are Ischemic and Hemorrhagic. Hemorrhagic can be further divided into two types; Intracranial and subarachnoid. Ischemic stroke is due to blockage of an arterial in the brain due to clot formation. Without enough blood inflow, brain cells begin to die. Hemorrhagic stroke occurs when a blood vessel in the brain bursts and tumbles blood into or around the brain. High blood pressure and aneurysms can make blood vessels weak enough to burst

Grounded on exploration studies, age, gender, race, ethnicity, heredity have been linked as unmodified risk factors for stroke. The common modifiable risk factors are Blood Pressure, Diabetes Mellitus, High Cholesterol, Atrial fibrillation and other heart disease, Smoking, alcohol, obesity have associated with increased stroke risk.

This study carried out to gain knowledge about early management, risk factors of stroke among people and to estimate the overall prescribing pattern of medications in stroke patients.

II. Material And Methods:

An observational retrospective study was carried out on prescribing pattern of drugs in stroke patients admitted in Government Headquarter Hospital, Nagapattinam from April 2021 to September 2021. A total of 75 patients aged above 18 were analyzed for this study

STUDY MATERIAL: An observational retrospective study was conducted

STUDY PLACE: Government District Headquarters Medical College Hospital Nagapattinam

STUDY DURATION: 6 months (April 2021 to September 2021)

1) INCLUSION CRITERIA:

- Patients above 18 years were included
- Both male and females were included
- To assess different types of stroke.

2) EXCLUSION CRITERIA:

- Patient under 18 were not included
- Pregnant and lactating women were not included
- Out patients were not included.

III. Methodology:

An observational retrospective study of prescribing pattern of drugs in stroke patients was conducted in Government District Headquarters Medical College Hospital, Nagapattinam

The study was conducted for 6 months from April to September and the data were collected from the patients' case report.

IV. Result:

In this study a total no of 75 prescriptions were studied during a period of 6 months. Out of 75 patients it was found male (83%) are higher risk than female (17%). Most stroke patients are aged between 40-60 years old (48%), above 60years (40%) 20-40 years old (12%).

FIGURE 1 shows gender distribution of patients

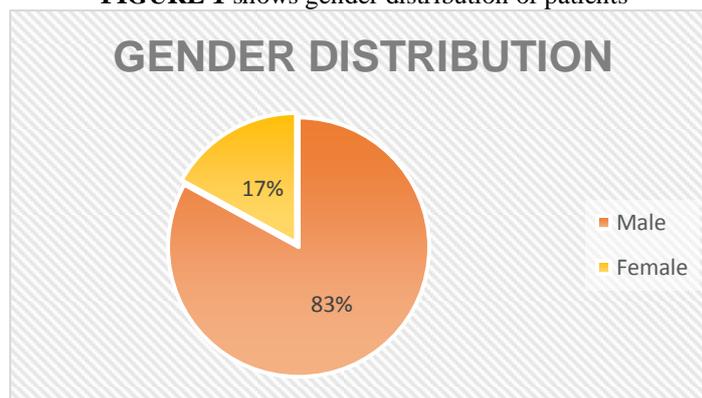
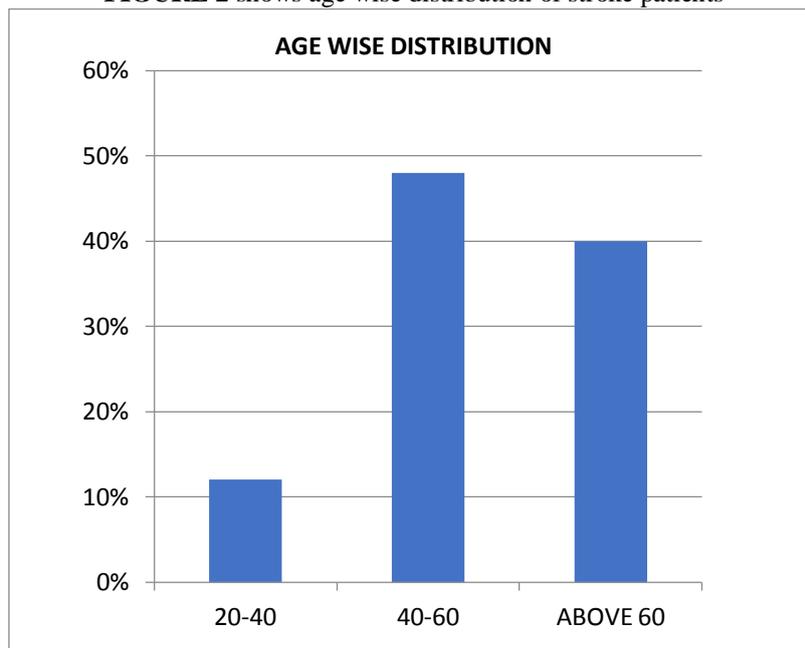
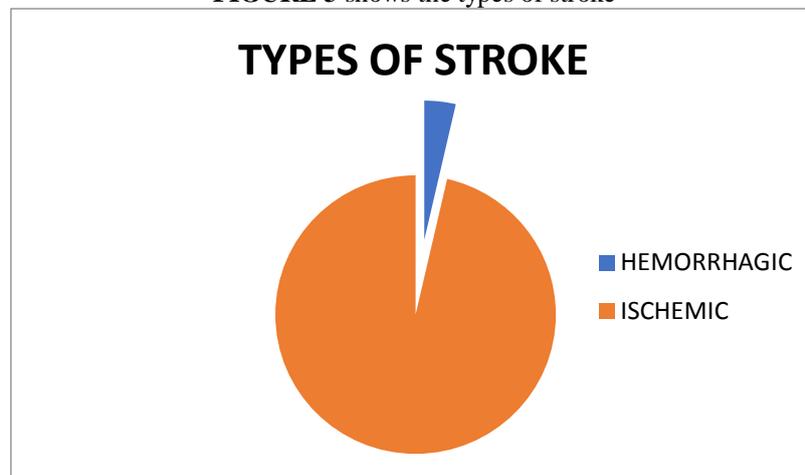


FIGURE 2 shows age wise distribution of stroke patients



Among 75 patients, 88% of patients diagnosed as Ischemic stroke and 12% of patients diagnosed as Hemorrhagic stroke

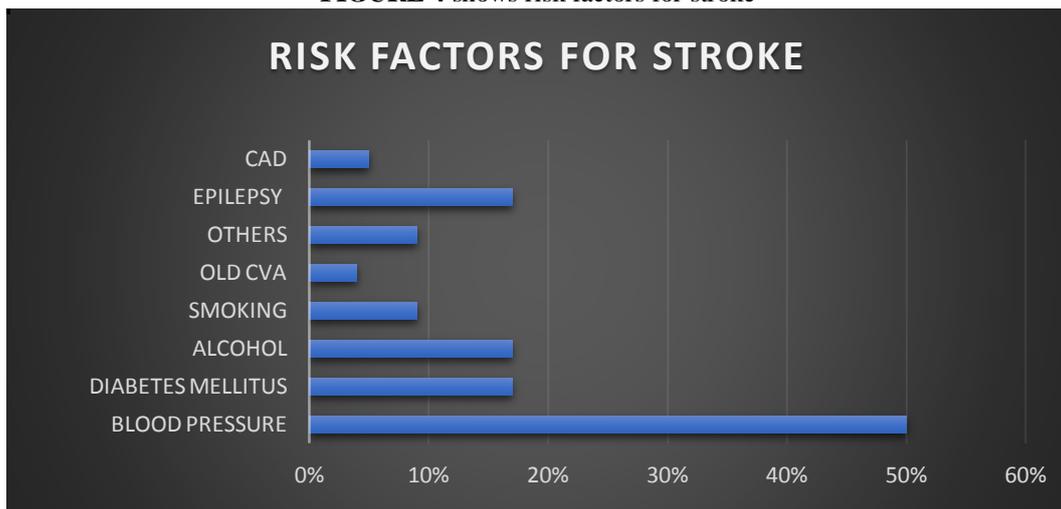
FIGURE 3 shows the types of stroke



RISK FACTORS AND CO-MORBIDITIES:

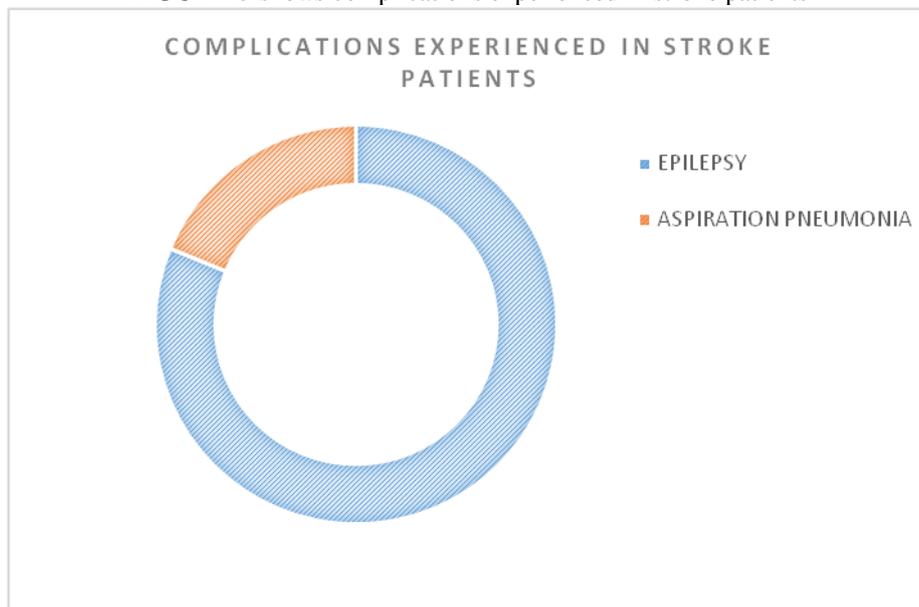
Out of study populations, the majority of the patients had a risk factor of hypertension (50%), followed by diabetes mellitus (17%) epilepsy (17%) , alcohol (17%) , smoking (9%) , old Cerebrovascular accident (4%), Coronary artery disease (5%) and other factors (9%)

FIGURE 4 shows risk factors for stroke



This study illustrates that out of 75 stroke patients, 13 patients developed Epilepsy (17.3%) and 3 patients developed aspiration pneumonia (4%)

FIGURE 5 shows complications experienced in stroke patients



PRESCRIBING PATTERN OF DRUGS:

In this study most commonly prescribed drugs were Antihypertensive (22%) followed by vitamin supplement (14%), Atorvastatin (12%), Antiplatelets like Aspirin (10%) , Clopidogrel (6%)

In Anticoagulants Heparin only used in our hospital (1.18%) and many more drugs prescribed for Co - morbidities such as Anticonvulsant (3%) , Antibiotics (5%) , Antidiabetics (1.58%) , H2 Receptor blockers (13%) , Antiemetics (3.16%) , Laxatives (1.5%) , Corticosteroids (2.3%) , Antihistamine (0.99%) , Antipsychotics (0.19%) , NSAIDs(3%) , Bronchodilators(0.99%) , Adrenaline (0.19%) , Sodium bicarbonate (0.39%) , DPN (0.19%) , Atropine (0.39%)

Antihypertensive were highly prescribed drug. Mannitol (5.44%) and calcium channel blockers were most dominant in the prescription such as amlodipine (5.34%) followed by furosemide (4.8%), nifedipine (2.4%), enalapril (1.4%), Metoprolol (0.99%), carvedilol (0.19%), propranolol (0.19%), prazosin (0.19%), diltiazem (0.19%), spironolactone (0.6%)

The combination therapy of aspirin and clopidogrel (3%) were used in some of the patients.

TABLE 1 shows the prescribed classes of drugs

DRUGS	NO OF DRUGS PRESCRIBED	PERCENTAGE OF DRUGS
ANTIHYPERTENSIVE AGENTS		
MANNITOL	27	5.34%
AMLODIPINE	27	5.34%
FUROSEMIDE	24	4.8%
NIFEDIPINE	12	2.4%
ENALAPRIL	7	0.99%
METOPROLOL	5	0.19%
CARVEDILOL	1	0.19%
PROPRANOLOL	1	0.19%
PRazosin	1	0.19%
DILTIAZEM	1	0.19%
SPIRONOLACTONE	3	0.6%
LIPID LOWERING AGENTS		
ATORVASTATIN	59	12%
ANTIPLATELETS		
ASPIRIN	38	7.5%
CLOPIDOGREL	22	4.5%
ANTICOAGULANT		
HEPARIN	6	1.18%
ANTICONVULSANT		
	14	2.77%
ANTIEMETIC DRUGS		
DOMPERIDONE	3	0.5%
ONDANSETRON	13	2.6%
ANTIBIOTICS		
	25	5%
CORTICOSTEROIDS		
DEXAMETHASONE	9	1.8%
HYDROCORTISONE	3	0.5%
VITAMIN SUPPLEMENT		
	66	13%
LAXATIVES		
	8	1.6%
ADRENALINE		
	1	0.19%
ANTI HISTAMINE		
	5	0.99%
ANTI PSYCHOTICS		
	1	0.19%
ANTI DIABETICS		
	8	1.58%
ATROPINE		
	2	0.39%
NSAIDs		
	14	2.8%
BRONCHODILATORS		
	5	0.99%
DPN		
	1	0.19%
H2 RECEPTOR BLOCKERS		
	11	13%

V. Discussion:

An observational retrospective observe of prescribing pattern of medication in stroke patients was carried out in Government District Headquarters Hospital Nagapattinam. The study was conducted for six months from April to September and the information had been collected from the patient's case report.

Among 75 patients, 88% of patients diagnosed as Ischemic stroke and 12% of patients diagnosed as Hemorrhagic stroke Out of study populations, the majority of the patients had a risk factor of hypertension (50%), followed by diabetes mellitus (17%) epilepsy (17%) , alcohol (17%) , smoking (9%) , old Cerebrovascular accident (4%), Coronary artery disease (5%) and other factors (9%) This study illustrates that out of 75 stroke patients, 13 patients developed Epilepsy (17.3%) and 3 patients developed aspiration pneumonia (4%)

In this study most commonly prescribed drugs were Antihypertensive (22%) followed by vitamin supplement (14%), Atorvastatin (12%), Antiplatelets like Aspirin (10%) , Clopidogrel (6%) In Anticoagulants Heparin most effective utilized in our hospital (1.18%) and many more drugs prescribed for Co -morbidity including Anticonvulsant (3%) , Antibiotics (5%) , Antidiabetics (1.58%) ,H2 receptor blockers(13%) , Antiemetics (3.16%) , Laxatives (1.5%) , Corticosteroids (2.3%) , Antihistamine (0.99%) , Antipsychotics (0.19%) , NSAIDs (3%) , Bronchodilators (0.99%) , Adrenaline (0.19%) , Sodium bicarbonate (0.39%) , DPN (0.19%) , Atropine (0.39%)

Antihypertensive had been exceedingly prescribed drug. Mannitol (5.44%) and calcium channel blockers were most dominant in the prescription consisting of amlodipine (5.34%) followed by furosemide (4.8%), nifedipine (2.4%), enalapril (1.4%), Metoprolol (0.99%), carvedilol (0.19%), propranolol (0.19%), prazosin (0.19%), diltiazem (0.19%), spironolactone (0.6%) The combination therapy of aspirin and clopidogrel (3%) had been utilized in a number of the patients.



Drug prescribed to stroke patients were according to
Standard treatment guidelines
Indian stroke association
AHA/ASA Guidelines.

VI. Conclusion:

In our study, 75 stroke patients were evaluated based on the prescribing pattern of drugs. The study shows males are more vulnerable compared to female. Out of 75 patients, the majority of patients were diagnosed as Ischemic stroke (88%) than Hemorrhagic (12%)

Hypertension, diabetes, alcohol consumption were the most common risk factors, followed by smoking, coronary artery disease and old cerebrovascular accident.

Most common prescribed class of drugs were antihypertensive, lipid lowering agents, antiplatelet, vitamin supplement followed by anticonvulsants, antidiabetic, antiemetic, antibiotics, antihistamine, H₂ receptor blockers, corticosteroids, laxatives, NSAIDs, Bronchodilators which are prescribed for co-morbidities.

The present study shows that early diagnosis and management for stroke is vital for survival. And then need of non-pharmacotherapy counselling for patients to prevent complications. And it also indicates the need to identify risk factors and creating awareness among the patients by a pharmacist in reducing the overload of disease and prescribing pattern of drugs are based on therapeutic guidelines

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