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Original Research Paper

Neurology

A PROSPECTIVE OBSERVATION STUDY OF TISSUE NECROSIS IN HEMORRHAGIC STROKE PATIENTS WITH TREATMENT REGIMEN AND OUTCOMES

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ABSTRACT

The hypoxic conditions in the brain of Central nervous system may lead to the death of the tissues. This process is a form of autolysis that is programmed due to the effect of cells in the brain. It occurs mostly due to trauma, hypertension, diabetes mellitus, or arteriovenous malformation. In this condition the patient may have severe facial drooling, weakness, headache, seizures and loss of balance, speech disturbance, nausea and vomiting.

A prospective observational study was carried out in a tertiary care hospital to evaluate tissue necrosis in hemorrhagic stroke patients with treatment regimen and therapeutic outcomes by the medication.

MATERIALS AND METHODOLOGY:

Sampling method: All the patients of age above 36-70 years suffering with stroke were included in the study.

Study site: The study was conducted in an intensive care unit of 500 bedded tertiary care hospital.

Study procedure: The study was done by collecting data by using patient case sheets, based on that data a questionnaire was prepared according to the guidelines of WHO and HRQOL. Nearly a data of 72 patients were included in the study with all the details of past medical history, the treatment regimen and laboratory parameters with frequency were collected.

Study duration: The duration of the study was 12 months (August 2017 to August 2018).

RESULTS: Out of 90 patients, 72 patients cooperated with us and provided the information that was the treatment regimen of stroke, reasons for admission and the results were discussed.

DISCUSSION: Out of 72 patients in our study who were suffering with hemiplegia the age group of 35- 70 years in which 50-60years was higher (33.33%). The reasons for the admission of patients were trauma (19.44%), hypertension (15.27), diabetes mellitus (13.88%) and the co morbidity for the hospitalization was hypertension (51.38%) and diabetes mellitus (34.72%). The treatment regimen for the stroke and general symptoms are mainly antibiotics, anti platelets, multivitamins.

CONCLUSION: Our study concludes that most of the patients were admitted in the hospital due to trauma and complication of diabetes. So there is a great need of adoption of various strategies to prevent trauma conditions and complications. As clinical pharmacists, if we counsel the public regarding their health and lifestyle modifications we can reduce the chances of stroke and we also should provide the information regarding hypertension, diabetes and complications of stroke. The awareness programmes conducted by the government may also reduce the cases of stroke.

KEYWORDS : Hypoxia, Hemorrhagic stroke, Hypertension, Diabetes mellitus

INTRODUCTION:

A stroke is a life threatening medical condition. It is a 5th leading cause of death. It occurs in the brain when a blood vessel bursts out and leaks the blood into the tissues of brain which causes the brain cells to die. Nearly 13 percent of strokes observed are of hemorrhagic among all the strokes. There are 2 types of Hemorrhagic strokes Intracerebral and Sub arachnoid hemorrhagic strokes. An emergency treatment is essential for the best recovery and it should focus on reducing the blood pressure as well as controlling the bleeding. The cases of stroke can be reduced by controlling the causes and risk factors

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MATERIALS AND METHODOLOGY:

Study design: Our study was hospital based prospective observational study conducted in 500 bedded tertiary care hospital.

Study procedure: The study was done by collecting data by using patient case sheets, based on that data a questionnaire was prepared according to the guidelines of WHO and HRQOL. Nearly a data of 72 patients were included in the study with all the details of past medical history, the treatment regimen and laboratory parameters with frequency were collected.

Sampling method: the patients of age above 36-70 years suffering with stroke were included in the study.

Study duration: The duration of the study was 12 months (August 2017 to August 2018)

INCLUSION CRITERIA:

Patients suffered with stroke
Patients of age above 36 years
Patients of both sexes

EXCLUSION CRITERIA:

Pediatrics, Pregnancy and lactating mothers, of sane minded and Psychiatric patients.

Study material:

Patient consent form: Consent was collected by using self design patient consent form. Consent was made into 3 languages - Telugu, English and Hindi

Ethical approval: The study was approved by institutional and hospital's ethical committee.

Data analysis: The data of demographic details, reasons for admission, treatment regimen and complications were analyzed by statistical software's like Microsoft excel and the result was given by frequency.

RESULTS: Out of 90 patients, 72 patients cooperated with us and provided the information that was the treatment regimen of stroke, reasons for admission and the results were discussed.

Table 1: Shows the demographic details of the patients with age groups, sex, marital status, educational level and nutritional status

Demographics	No of patients	Frequency (%)
Age		
36- 45	12	16.66
46-54	20	27.77
55-60	24	33.33
61- 70	16	22.22
Sex		
Females	27	37.5
Males	45	62.5

Marital status		
Married	54	75
Unmarried	18	25
Educational level		
Primary	12	16.66
Secondary	44	61.11
tertiary	16	22.22
Nutritional status		
Poor	6	8.33
Average	38	52.77
Better	28	38.88

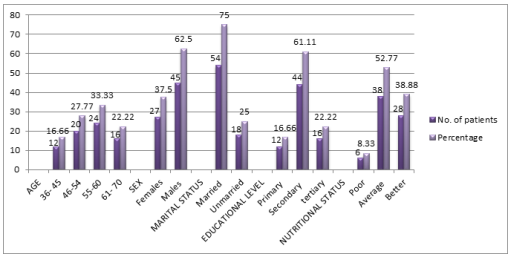


Table 2: Shows the Reasons for admission in the intensive care unit of a tertiary care hospital

Reasons	No. of patients	Frequency (%)
Trauma (accidents)	14	19.44
Hypertension	11	15.27
Diabetes mellitus	10	13.88
Depression	3	4.16
Seizures	8	11.11
Headache	6	8.33
Hyperlipidemia	3	4.16
Heart diseases	2	2.77
Obesity	5	6.94
Hypoxic conditions	8	11.11
Severe dehydration (Hyponatremia, shock)	2	2.77

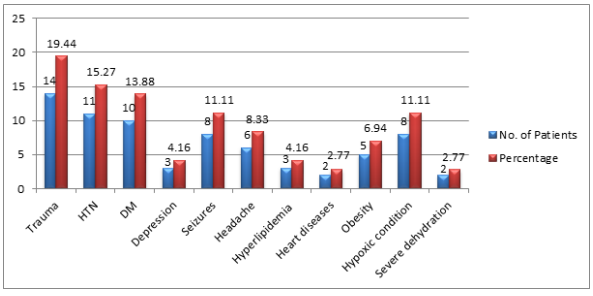


Table 3: Indicates the Patients with co morbidity complications for the cause of stroke

Co morbidity	No. of patients	Frequency (%)
Hypertension	37	51.38
Diabetes	25	34.72
Seizures	3	4.16
Weakness	5	6.94
Asthma	2	2.77

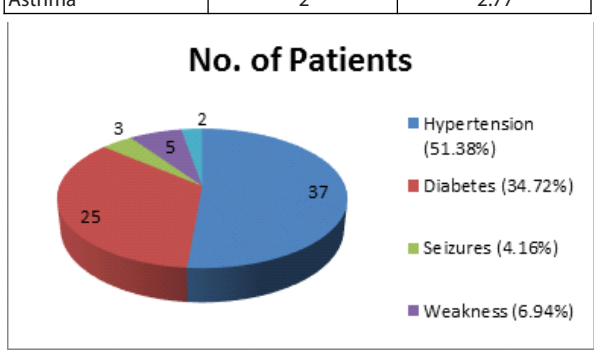


Table 4: Shows the time taken to reach hospital for the treatment to overcome the stroke

Time (hrs)	No. of patients	Frequency (%)
0-3	10	13.88
4-8	13	18.05
9-14	11	15.27
15-23	12	16.66
24-36 (no symptoms	15	20.83
on 1st day)	6	8.33
36-48	5	6.94
More than 48		

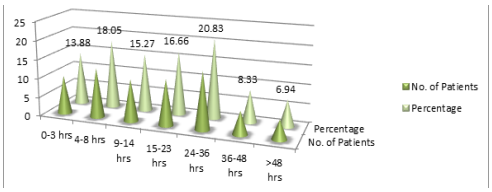


Table 5: Shows the Laboratory parameters performed during admission for the final diagnosis and confirmation of the condition

Parameters	No. Of patients	Frequency (%)
CT Scan	72	100
MRI scan	72	100
CBC	72	100
CUE	38	52.77
Electrolytes	72	100

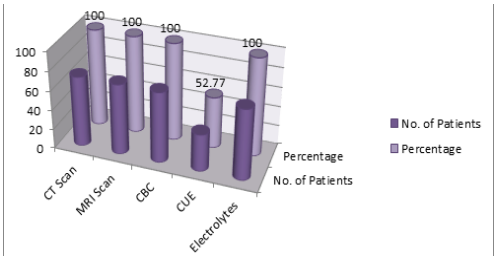


Table 6: Shows the Treatment regimen to overcome the conditions and symptoms.

Medication	Route of administration	No. of patients	Frequency (%)
Ceftriaxone	IV	54	75
Cefoperazone + Sulbactam	IV	18	25
Delteperin	IV	45	62.5
Enoxaparin	IV	54	33.3
Lorazepam	IV	60	83.33
Midazolam	IV	36	50
Piracetam	Oral (suspension)	16	22.22
Levetiracetam	IV	56	77.77
Aspirin + Clopidogrel	Oral	72	100
Oxetacaine + Sucralfate	Oral (suspension)	72	100
Pantaprazole	IV	72	100
Ondansetron	IV	72	100
Citicoline	IV	72	100
Multivitamin	IV	72	100
Potassium chloride	IV	72	100
Paracetamol (100 ml)	IV	54	75
Sodium bicarbonate	IV	63	87.5

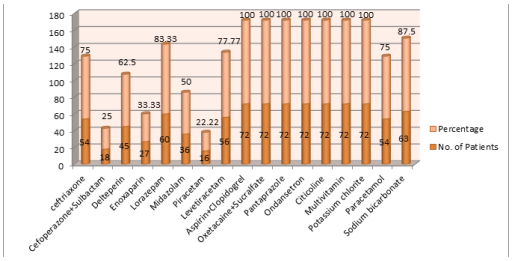


Table 7: Shows the duration of hospital stay for the relapse of symptoms and to become normal

Days	No. of patients	Frequency (%)
1-3	8	11.11
4-6	17	23.61
7-9	35	48.61
9-14	12	16.67

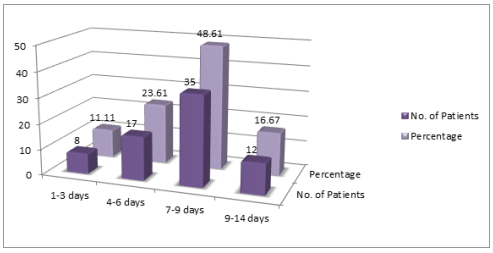


Table 8: Shows the Therapeutic outcomes by the medication given as the therapy for symptoms of stroke and illness

Condition	No. of patients	Frequency (%)
Poor	22	30.55
Average	35	48.61
Better	8	11.11
No change	7	9.72

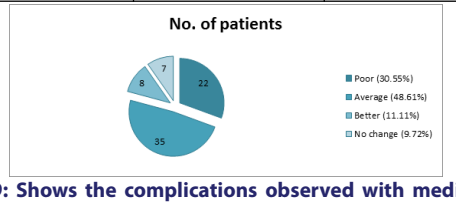


Table 9: Shows the complications observed with medication given for the therapy of stroke

Conditions monitored	No. of patients	Frequency (%)
Hypotension	21	29.16
Hypokalemia	18	25
Hyperlipidemia	11	15.27
Deep vein thrombosis	5	6.94
Seizures	11	15.27
Hydrocephalus	6	8.33

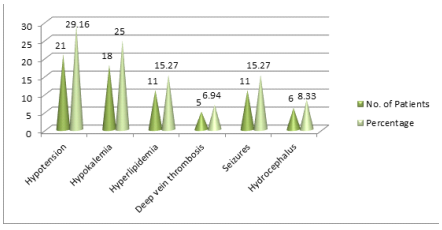


Table 10: Shows the medication for co morbidity conditions for the past and present illness of the patient

Condition	Medication	No. of patients	Frequency (%)
Hypertension	Telmisartan+ HCTZ	36	57.14
	Olmesartan + HCTZ	27	42.85
Diabetes mellitus	Glimeperide+ Metformin	45	62.5
Seizures	Levetiracetam	34	47.22
Weakness	Multivitamins	72	100
Asthma	Asthalin	16	22.22

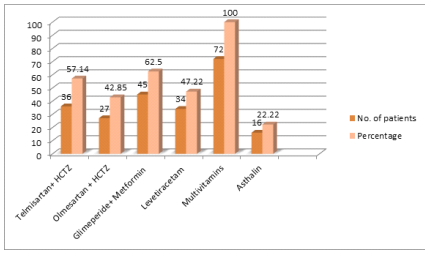


Table 11: Shows the Rehabilitation therapy to the patients for their normal life.

Therapy	No .of patients	Frequency (%)
Physiotherapy	72	100
Cognitive behavioral therapy	32	44.44
Speech therapy	45	62.5
Mobilization	72	100

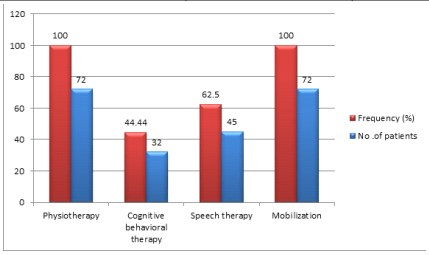


Table 12: Shows the measurement of stroke by using stroke scale for the assessment of parameters for causing stroke.

Parameters	Category	Score	No. of patients	Frequency (%)
Blood pressure	High	2	63	87.5
	Normal	1	9	12.5
Clinical features	Unilateral weakness	2	45	62.5
	Speech disturbances	1	27	37.5
TIA symptoms	Seen	2	18	25
	Unseen	1	54	75

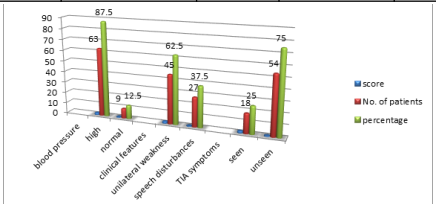


Table 13: Shows the regularity on medication for the treatment provided for the condition.

Usage of medicine	No. of patients	Frequency (%)
Regular	40	55.55
Irregular	32	44.44

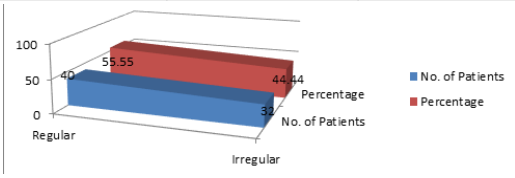
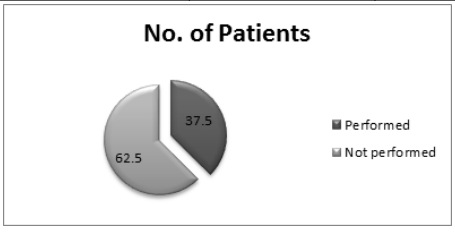


Table 14: Shows the Surgeries performed due to the condition or the removal of clots where summarized below.

Surgery	No. of patients	Frequency (%)
Performed • Decompression surgery • Craniotomy with open surgery • Clipping or coiling procedure • Surgical clipping • Endovascular coiling	27	37.5
Not performed	45	62.5



DISCUSSION:

Out of 72 patients in our study who were suffering with hemiplegia the age group of 35-70 years in which 50-60years was higher (33.33%) and of the both sexes, males were majorly affected with 62.5% of which married were 75% and unmarried were 25%. The education levels of the maximum patients were secondary (61.11%) and nutritional status was average (52.77%). The reasons for the admission of patients were trauma (19.44%), hypertension (15.27), diabetes mellitus (13.88%) and the co morbidity for the hospitalization was hypertension (51.38%) and diabetes mellitus (34.72%). The maximum time taken to reach the hospital was 24-36 hours (20.83%) and minimum was more than 48hours due to normal lifestyle. Normal parameters were recorded, CT and MRI were performed for the final diagnosis and to treat stroke. The treatment regimen for the stroke and general symptoms are mainly antibiotics, anti platelets, multivitamins. The patients recovering to normal condition was mainly based on the stay in the hospital i.e., 7-9 days was maximum (48.61%) and minimum was of 1-3 days (11.11%). During the hospital stay with the treatment regimen the outcomes were average (48.61%) and no change in the condition was minimum with 7 patients (9.72%). Complications observed with the treatment of stroke were hypotension (29.16%) and hypokalemia (25%) and co morbidity treatment to reduce the symptoms like hypertension (63%) and diabetes mellitus (45%) were with different treatment modulators. To get rid from the weakness the physical therapies provided were rehabilitation mainly physiotherapy, CBT, speech therapy and mobilization. In our study we measured the stroke by WHO scales and recorded the values, regularity on medication in which maximum were regular (55.55%) and surgeries were performed in less patients to reduce the pressure.
All the readings above were tabulated.

CONCLUSION:

Our study concluded that the patients who are suffering with stroke are of age group 35-70 years are maximum due to traumatic conditions and complications occurred in the life. It is mostly a cost effective and cost economic disease which will increase the burden on patient family and shows the different ailments to become normal condition. It is mainly depend on the regularity of medicine; any serious events can take place at any time. The government should provide health insurance to get easy for the treatment and surgery. As we are the clinical pharmacist we will guide the patients and counsel about the disease and therapies of life to make the benefits of the patients to increase the expectancy of life.

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