

Descriptive Study on Presentation of the Stroke

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ABSTRACT

Objective: To see the clinical presentation of Stroke and risk factors

Study Design: Descriptive / Cross Sectional Study

Place and Duration of Study: This Study was conducted in the department of Medicine at PMCH Nawabshah from November 2015 to February 2017.

Materials and Methods: 115 patients were enrolled for this study 67 were males and 53 were females, informed consent was taken from all the relatives of patients using Questionnaire translated into local languages, statistical analysis was done using SPSS 15 version.

Results: Age range from 47 to 76 years mean age was 63.91±8.05. 38 patients were drowsy or unconscious. Out of 115 patients 70 patients were diagnosed as Ischemic Stroke and 45 as Hemorrhagic Stroke diagnosed using CT Scan Brain. 84 patients were diabetic, 95 patients were hypertensive and 31 patients were non diabetic and 20 patients were non hypertensive, cholesterol level ranged 153-294 mg/dl, RBS ranged 120-452 mg/dl. 96 patients were discharged and 19 patients expired due to severity of disease and complications.

Conclusion: Stroke is a major problem in our country, main risk factor noted was diabetes, hypertension, hyperlipidemia and old age. Proper treatment of diabetes, hyperlipidemia, hypertension and counseling about disease mortality and morbidity can be reduced.

Key Words: Stroke, Ischemia, hemorrhage, Diabetes Mellitus, Hypertension

Citation of articles: Daidano JK, Yusufani NA, Kanher AA. Descriptive Study on Presentation of the Stroke. Med Forum 2018;29(1):68-72.

INTRODUCTION

Stroke is a disease characterized by decreased blood flow to brain resulting cell death. There are two types of stroke ischemic and hemorrhagic. WHO reported 15 million patients of stroke worldwide per year. Out of these 5 million are disabled and 5 million die.¹ Yearly incidence of stroke in USA is 800000, 82-92% of these strokes are ischemia. Stroke is the 5th main cause of mortality and morbidity.² With disturbance of brain function patient can not move one side of body with loss of sensation and in some cases aphasia.³ Few patients present with facial palsy and loss of vision to one side. Severe headache associated with hemorrhagic stroke.³ Patient may develop complete paralysis or recover within 24 hours, if recover within 24 hours termed as a TIA.³ Main risk factors of stroke are diabetes mellitus, hypertension, hyperlipidemia, smoking, atrial fibrillation, mitral or aortic stenosis and atherosclerosis or old age.³ Ischemic stroke caused by thrombosis or embolism.⁴

Ischemia due particular vessel involvement release of excitatory and other neuropeptides, resulting calcium flux into neurons, cell death and neurologic deficit is increased. Hypoxia and depletion of ATP caused by ischemia, due lack of energy is not available for maintenance of ionic gradients across the cell membrane and cell depolarization. Influx of calcium and sodium ions and inflow of water into cell resulting cerebral edema.⁵ In ischemic stroke local blood flow is limited in cerebral arteries, affected cerebral blood flow lower than 10 ml/100 gm of tissue /minute. Stroke resulting within minutes due to cell death.⁶ Ischemic stroke is subdivided into 3 sub types,⁷ large artery, small vessel or lacunar and cardioembolic infarction. Arteries involved are carotid, vertebrobasilar and cerebral arteries. Recurrent stroke is mainly due to cardioembolic emboli, with high mortality. Intracerebral hemorrhage occurs in arteries and arterioles,⁸ secondary hemorrhage occurs due to AV malformation, in subarachnoid hemorrhage bleeding occurs outside the brain tissue but in skull, mortality rate is high in intracerebral hemorrhage. Cocaine causes spasm of an artery. Stroke is diagnosed with CT Scan, MRI, Doppler ultrasound and arteriography. Blood test commonly used for the diagnosis of stroke.⁹ MRI is useful in chronic hemorrhages.¹⁰ Medication recommended for ischemic stroke is Alteplase or rt-PA, if needed anti hypertensive, anticonvulsants and osmotic agents are recommended. Treatment of comorbid disease if present. Criteria for treatment of ischemic stroke are, 1. Anticoagulation 2. Reperfusion 3. Antiplatelets.

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Received: October, 2017;

Accepted: December, 2017

Conservative and supportive treatment is better for intracerebral hemorrhage. Intraventricular hemorrhage and hydrocephalus require ventricular drainage. evacuation of hematoma in cerebellar hemorrhage is necessary. Survival is improved with recombinant factor 7. Aim of treatment in SAH is to prevent hemorrhage and surgical clipping.cmdt

MATERIALS AND METHODS

This descriptive cross sectional study was carried out in the department of Medicine PMCH Nawabshah from November 2015 to February 2017. After taking informed consent to relatives of patients and well conscious patients a written Questionnaires translated in Sindhi and Urdu languages was given and study was done using Questionnaires. Detailed history was taken. Clinical examination was done with all routine investigations, CT Scan, ECG, Echocardiography and specific investigations according to cause. Statal analysis was done using SPSS 15 version.

Inclusion criteria

All patients with hemiplegia
CT Scan positive with infarction or hemorrhage

Exclusion criteria

Uncooperative patient
CT Scan negative for infarction or hemorrhage
Intracranial tumor

RESULTS

Total patients selected for this study were 115, 67 males, 53 females, age ranged 47 to 76 years mean age was 63.91_+8.05, right sided hemiplegic were 87, left sided hemiplegic were 28, aphasia noted in 46 patients, CT Scan was done all patients, infarction was noted in 70 patients, hemorrhage in 45 patients. GCS scale 7/15 in 63 patients, 12/15 in 18 patients, 9/15 in 10 patients, 3/15 in 17 patients and 15/15 in 7 patients. 47 patients admitted with altered level of consciousness.

Table No.1: Type. Stroke

Variable	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	70	60.9	60.9	60.9
2	45	39.1	39.1	100.0
Total	115	100.0	100.0	

Table No.2: Occupation

Variables	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	50	43.5	43.5	43.5
2	52	45.2	45.2	88.7
3	8	7.0	7.0	95.7
4	5	4.3	4.3	100.0
Total	115	100.0	100.0	

Table No.3: Sex

Variables	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	62	53.9	53.9	53.9
2	53	46.1	46.1	100.0
Total	115	100.0	100.0	

Table No.4: Type. Stroke

Variables	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	80	69.6	69.6	69.6
2	15	13.0	13.0	82.6
3	13	11.3	11.3	93.9
4	7	6.1	6.1	100.0
Total	115	100.0	100.0	

Table No.5: Paired Samples Statistics

		Mean	N	Std. Deviation
Pair 1	Type.Stroke	1.39	115	.490
	RBS	281.17	115	87.947
Pair 2	Type.Stroke	1.39	115	.490
	Age	63.91	115	8.053
Pair 3	Type.Stroke	1.39	115	.490
	Cholesterol	248.18	115	31.939
Pair 4	Type.Stroke	1.39	115	.490
	Sys.BP	172.7391	115	32.88232
Pair 5	Type.Stroke	1.39	115	.490
	Dia.BP	99.3478	115	13.08745

Table No.6: Paired Samples Correlations

	Variables	N	Correlation	Sig.
Pair 1	Type.Stroke& RBS	115	.126	.181
Pair 2	Type.Stroke& Age	115	-.414	.000
Pair 3	Type.Stroke& Cholesterol	115	-.014	.881
Pair 4	Type.Stroke&Sys.BP	115	.123	.189
Pair 5	Type.Stroke&Dia.BP	115	.081	.389

Table No.7: Statistics

	Type Stroke	Age	Occupation	Sex	Education
N Valid	115	115	115	115	115
Missing	0	0	0	0	0

Facial palsy noted in 27 patients .At the time of admission motor power was 0/5 in 78 patients, 4/5 in 23 patients, 3/5 in 11 patients, 2/5 in 3 patients, planters up going in 97 patients, equivocal in 18 patients all the patients. 84 patients were diabetic, random blood sugar level ranged 120-452 mg. 95 patients were hypertensive, systolic BP ranged 120-230 mmHg, diastolic BP ranged 70-130 mmHg. 28 patients were non diabetic nonhypertensive. Cholesterol was

increased 104 patients, ranged 153-294mg. Hb ranged 7-12, Leukocyte count ranged 8967-15725. Platelets count ranged 80218-222042. Urea ranged 23-280, creatinine ranged 0.8-19. PT ranged 12-24. In statistical analysis males denoted by 1, females denoted by 2,

uneducated by 1, primary by 2, middle by 3, matric by 4, farmer by 1, housewife by 2, un employed by 3, self business by 4. Out of 115 patients 96 discharged and 19 expired due to severity of disease and complications.

Table No.8: ANOVA

Variables		Sum of Squares	Df	Mean Square	F	Sig.
Age	Between Groups	1264.210	1	1264.210	23.308	.000
	Within Groups	6128.921	113	54.238		
	Total	7393.130	114			
Sex	Between Groups	.663	1	.663	2.683	.104
	Within Groups	27.911	113	.247		
	Total	28.574	114			
Occupation	Between Groups	18.518	1	18.518	41.372	.000
	Within Groups	50.578	113	.448		
	Total	69.096	114			
Education	Between Groups	39.131	1	39.131	76.978	.000
	Within Groups	57.443	113	.508		
	Total	96.574	114			
RBS	Between Groups	13906.006	1	13906.006	1.811	.181
	Within Groups	867840.516	113	7680.005		
	Total	881746.522	114			
Cholesterol	Between Groups	23.216	1	23.216	.023	.881
	Within Groups	116269.949	113	1028.938		
	Total	116293.165	114			
Hemoglobin	Between Groups	39.862	1	39.862	42.486	.000
	Within Groups	106.021	113	.938		
	Total	145.883	114			
L.Count	Between Groups	4922418.962	1	4922418.962	3.049	.083
	Within Groups	182406952.986	113	1614220.823		
	Total	187329371.948	114			
Platelets	Between Groups	1255166843.494	1	1255166843.494	1.184	.279
	Within Groups	119781080338.071	113	1060009560.514		
	Total	121036247181.565	114			
PT	Between Groups	12.524	1	12.524	1.580	.211
	Within Groups	895.771	113	7.927		
	Total	908.296	114			
Urea	Between Groups	655.962	1	655.962	.204	.653
	Within Groups	363722.421	113	3218.782		
	Total	364378.383	114			
Creatinine	Between Groups	2.651	1	2.651	.198	.657
	Within Groups	1514.780	113	13.405		
	Total	1517.432	114			
Sys. BP	Between Groups	1876.896	1	1876.896	1.747	.189
	Within Groups	121385.278	113	1074.206		
	Total	123262.174	114			
Dia.BP	Between Groups	128.587	1	128.587	.749	.389
	Within Groups	19397.500	113	171.659		
	Total	19526.087	114			

DISCUSSION

Stroke is a major problem in our country. In our study major risk factors found were diabetes mellitus and

hypertension. Majority of the patients reported in acute stroke.¹¹ Diagnosis of acute stroke is a challenge. Training about stroke management for physicians and nursing is important. Stroke patients present weakness of arm and leg, most of the patient are obese, having

atrial fibrillation at the time of hospitalization. Previous observations of stroke with history of atrial fibrillation in hospitalized patients.¹² As compared to community stroke patients cardioembolic risk is more in hospital stroke patients.¹² Withdrawal of anticoagulation treatment in atrial fibrillation patients develop ischemic stroke. Poor prognosis was noted in cardioembolic stroke with atrial fibrillation in previous studies.¹³ Early anticoagulation in these patients is helpful. Patients awaiting awaiting i/vtPA, CT, MRI and EEG are recommended.¹³ After anterior circulation ischemic stroke is associated with worse neurological outcome with elevated systolic blood pressure, systolic blood pressure is better predictor of neurologic outcome.¹⁴ In normal circumstances cerebral blood flow is maintained by cerebrovascular bed autoregulation.¹⁵ After severe to moderate ischemic stroke autoregulation is lost.¹⁶ No benefit or worse outcome stroke with antihypertensives in a study.¹⁷ For ischemic stroke labetalol was superior than calcium channel blockers.¹⁸ Vasopressor in ischemic stroke increases neurological outcome without any side effect in a randomized controlled trial.¹⁹ There is increased chances of ischemic and hemorrhage stroke in diabetes.²⁰ In acute stroke hyperglycemia is common, may be due to stress or impaired glucose metabolism. In a study on rats cerebral blood volume in cerebral hemisphere is reduced 37% in hyperglycemic as compared to normal glucose level.²¹ Behavioral risk factors like obesity, heavy drinking and smoking should be reduced. Incidence of stroke is increased in males as compared to females. In European countries risk increased in females less than 30-35 years of age in studies. Due to genetic susceptibility premature atherosclerosis can occur. For prevention of stroke knowledge about risk factors is important, most of the patients know about risk factors.²¹ Hypertension was most commonly identifiable risk factor second obesity, consumption of high food, smoking and alcohol consumption were known risk factors.²² These are modifiable risk factors, other known non modifiable risk factors are old age and family history. In another study it was found that peoples who were graduate or master in their educational qualification know well about risk factors as compared to non educated and primary or secondary education,²³ same was observed in this study. 80% patients of stroke were hypertensive, diabetic or both a study in Nigeria.²⁴ Stroke prevention is best than treatment in poor countries, knowledge of risk factors and health education are good measures to prevent stroke.²⁵

CONCLUSION

Stroke is a major problem in our country, major risk factors noted was Diabetes mellitus, Hypertension, hyperlipidemia and old age. Ratio in male sex is increased, avoiding cigarette smoking, weight reduction

in obese people, education of the people about risk factors, increase physical activity, avoidance of saturated fat intake, morbidity and mortality can be reduced. Diabetes is a modifiable with oral hypoglycemic and insulin therapy. Poor outcome of stroke in ischemic and hemorrhagic stroke noted in hyperglycemia. People give up antihypertensive after BP control and chances of stroke are increased and there is a need of education about BP control.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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