

AN EVALUATION OF SHORT-TERM PROGNOSTIC SIGNIFICANCE OF VARIOUS CLINICAL PARAMETERS IN PATIENTS OF STROKE

Sonali Saxena*, Shadab A. Khan**, Jalaj Saxena***

* Consultant Cardiologist, ** Professor (Medicine), *** Assistant Professor (Physiology)

Ishwardevi Medical and Cardiology Centre, Kanpur

J.N. Medical College, A.M.U., Aligarh and G.S.V.M. Medical College, Kanpur

ABSTRACT :

Objectives : To predict the short-term prognostic significance of various clinical parameters at the time of admission in patients of stroke.

Setting: Department of General Medicine, J.N. Medical College, A.M.U., Aligarh

Participants : 100 patients of stroke (Cerebro-vascular accident) comprising 54 males and 46 females.

Clinical Parameters : Admission Blood Pressure, Side of paralysis, Extent of Paralysis, Gastro-intestinal Haemorrhage, Level of consciousness at the time of admission.

Statistical Analysis : 'Z' test ($Z \geq 1.96$).

Results : The admission B.P. was raised in 75% of patients. The mortality was significantly high (57.1%) in the severe grade B.P. while recovery was significantly high (64.3%) in mild or moderate grade B.P. patients. The **left sided paralysis** was having significantly high mortality of patients (49%) while recovery was significantly high (56.2%) in the patients with right sided paralysis. The paralysis with Grade 0 power was in 58% of stroke patients and was associated with significantly high (53.4%) mortality while 100% recovery was found in patients with power grade 4 and 5 at the time of admission. The **G.I. haemorrhage** was associated with 5% of patients but mortality was significantly high (100%) in these patients. The **level of consciousness** of grade I was highest (34%) while mortality was significantly high (100%) in the patients admitted with grade 3 level of consciousness. The recovery was significantly high (92.9%) in the patients admitted with grade '0' level of consciousness.

Key Words: Stroke, B.P., Paralysis, G.I. Haemorrhage, Consciousness.

Abbreviations : B.P. – Blood Pressure, H.T.- Hypertension, G.I.- Gastro-intestinal.

INTRODUCTION :

Stroke or cerebro-vascular accident is one of the neurological diseases causing death. There are many variables which at the time of admission directly or indirectly affect the overall outcome in patients of stroke.

MATERIAL AND METHODS :

The present study was done on 100 patients of stroke admitted in the in-patient

department of Medicine Ward at J.N. Medical College, Aligarh Muslim University, Aligarh. The patients taken were presenting within 24 hours of onset of symptoms. The follow up time of patients was taken as 30-days in which mortality, morbidity and recovery was ascertained. Only those patients who stayed in the hospital for 30 days or who came for follow-up after discharge upto 30 days of onset of stroke were included in this study.

The clinical parameters taken were age, sex, admission blood pressure, side of paralysis, extent of paralysis, gastro-intestinal haemorrhage and level of consciousness at the time of admission.

The statistical analysis was done by 'Z' test and $Z \geq 1.96$ was taken as significant.

The 30-day outcome of the 100 patients of stroke showed that 34 patients died (mortality), 21 had the same status (morbidity) while 45 patients recovered (recovery). The mean age of the patients was 57.44 ± 13.88 years with 54 males and 46 females.

OBSERVATION AND RESULTS :

TABLE - 1
Sex with Outcome of Stroke

Outcome Sex	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Male (n=54)	16 (29.6%)	11 (20.4%)	27 (50%)
Female (n=46)	18 (39.1%)	10 (21.7%)	18 (39.1%)

TABLE - 2
Admission Blood Pressure with Outcome of Stroke

Outcome Admission B.P.(mm of Hg)	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Normal(n=25)($\leq 89 / \leq 139$)	6 (24%)	10 (40%)	9 (36%)
Mild Hypertension(n=12)(90-99 / 140/159)	-	4 (33.3%)	18 (64.3%)*
Moderate H.T. (n=28)(100-109/160-179)	8 (28.6%)	2 (7.1%)	18 (64.3%)*
Severe H.T.(n=35) ($\geq 110 / \geq 180$)	20 (57.1%)*	4 (11.4%)	11 (31.4%)

TABLE - 3
Side of Paralysis with Outcome

Outcome Side of paralysis	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Right (n=54)	9 (18.8%)	12 (25%)	27 (56.2%)
Left (n=46)	25 (49%)*	9 (17.6%)	17 (33%)
No paralysis (n=1)	-	-	1 (100%)

TABLE - 4
Extent of Paralysis with Outcome

Outcome Extent of paralysis (Grades of Power)	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
0(n=58)	31 (53.4%)*	14 (24.1%)	13 (22.4%)
1(n=7)	2 (28.6%)	1 (14.3%)	4 (57.1%)
2(n=10)	-	1 (10%)	9 (90%)
3(n=15)	1(6.7%)	5 (33.3%)	9 (60%)
4(n=9)	-	-	9 (100%)
5(n=1)	-	-	1 (100%)

TABLE - 5
Gastro-intestinal Haemorrhage with Outcome

Outcome G.I. Haemorrhage	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Present (n=5)	5(100%)*	-	-
Not present(n=95)	29(30.5%)	21(22.1%)	45(47.4%)

TABLE - 6
Level of consciousness at admission with Outcome

Outcome Level of Consciousness	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Grade 0 (n=14)	-	1(7.1%)	13(92.9%)*
Grade 1(n=34)	2(6.9%)	5(14.7%)	27(79.4%)
Grade 2(n=22)	2(9.1%)	15(68.2%)	5(22.7%)
Grade 3(n=30)	30(100%)*	-	-

DISCUSSION :

The 30 day outcome of high mortality was reported earlier also^{1,2}. The admission raised B.P.³ was associated with greater mortality^{4,5}. The incidence of left sided paralysis was more and was associated with high mortality^{6,7,8}. The incidence of gastro-intestinal haemorrhage was found to be associated with high mortality and is reported earlier also^{9,10}. The grades of level of consciousness also can predict the prognosis in patients of stroke as grade '0' level was associated with recovery while grade 3 level of consciousness with high mortality^{1,11,12}.

CONCLUSIONS :

1. The admission B.P. was found to be increased in 75% of patients. The mortality was significantly high (57.1%) in the patients having severe hypertension at the time of admission indicating bad prognosis. Patients with mild or moderate hypertension were having high recovery (64.3%) ,thus have good prognosis.
2. The left sided paralysis was associated with significantly high (49%) mortality indicating poor prognosis. The recovery was significantly high (56.2%) in stroke patients with right sided paralysis. The patients with no paralysis showed 100% recovery.

3. The extent of paralysis with grade '0' power was in 58% of stroke patients and was associated with significantly high (53.4%) mortality while 100% recovery was found in patients with power grade '4' and '5' at the time of admission.
4. The gastro-intestinal haemorrhage was found in only 5% of patients but with significantly high (100%) mortality showing worst prognosis.
5. The level of consciousness of grade '3' patients had significantly high mortality (100%) indicating worst prognosis while in the patients with grade '0' level of consciousness , recovery was significantly high (92.9%).

REFERENCES :

1. Kawahata N : Cerebrovascular disease in the elderly- Clinical study of 31 cases with acute intracerebral haemorrhage. *Rinsho Shinkeigaku* 1990 July; 30(7): 713-7.
2. Daverat P, Castel JP, Dartigues JF, Orgogozo JM: Death and functional outcome after spontaneous intracerebral haemorrhage. A prospective study of 166 cases using multivariate analysis. *Stroke* 1991 Jan; 22(1): 1-6.
3. Britton M, Carlsson A, deFaire U: Blood

- Pressure course in patients with acute stroke and matched controls. *Stroke* 1986 Sept-Oct; 17(5): 861-4.
4. Carlberg B, Asplund K, Hagg E : The prognostic value of admission blood pressure in patients with acute stroke. *Stroke* 1993 Sept. 24(9): 1372 – 5.
 5. Terayama Y, Tenahashi N, Fukuuchi Y, Gotoh F: Prognostic value of admission blood pressure in patients with intracerebral haemorrhage. Keio Cooperative stroke study. *Stroke* 1997 June, 28(6) : 1185-8.
 6. Chambers BR, Norris JW, Shruvell BL, Hachinski VC: Prognosis of acute stroke. *Neurology* 1987 Feb, 37(2) : 221-5.
 7. Anderson CS, Jamrozik KD, Stewart Wynne EG: Predicting survival after stroke: experience from Perth Community Stroke Study: *CL in Exp Neurol.* 1992, 29:117-28.
 8. Beneditti MD, Beneditti M, Stenta G, CostaB, Fiaschi A: Short term prognosis of stroke in a clinical series of 94 patients, *Ital J Neurol Science* 1993 Mar; 14(2): 121-7.
 9. Masten, MG and Bunts RC: *Arch Intern Med* 1934, 54, 916.
 10. Doig A, Shafar J : Gastric haemorrhage in acute intracranial vascular accidents. *Q J Med* 1956, 25; 1-17.
 11. Mase G, Zorzon M, Biasutti E, Tasea G, Vitrani B, Cazzato G : Immediate prognosis of primary intracerebral haemorrhage using an easy model for the prediction of survival. *Acta Neurol Scand* 1995 Apr.; 91(4): 306 – 9.
 12. Ribeiro JA, Pereira S, Basto MA, Pontes C : The initial loss of consciousness in spontaneous subarachnoid haemorrhage. What does it mean ? *Acta Med Port*, 1998 Dec 11(12) : 1085 – 90.