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Age and Delay Hospitalization is Most Effective Prognostic Tool for Determination of Outcome for Cerebrovascular Accident Patients

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Abstract

Aims & Objectives: To *determine the characteristic, clinical etiologies, type of stroke andhospital andpost discharge 6 month in follow up in patient admitted to medicine/ neurology services with acute stroke in M. Y. Hospital, Indore. To determine the disability related to stroke as estimated by modified Rankin score at the time of admission and 6 month follow up*

Material & Methods: *This study was carried out in the Department of Medicine, MGM Medical College and M.Y. Hospital, Indore, from 2009 to 2013. We included 100 consecutive patients of strokes admitted to intensive care unit under medicine/neurology services. All patients or relative provided valid informed written consent for participation. After taking into considerations all the inclusion and exclusion criteria's, the written consent to take part in study was obtained. Patient's data was collected within 24 hours of the admission (including rapidly fatal stroke),[1] during hospital stay and at the time of discharge using a standard Case Report Form. Data collected in the form of Baseline Characteristics, Stroke severity, Risk Factors for stroke, routine investigations like complete blood count, renal function test, serum electrolyte, lipid profile, ECG, neuroimaging like Computed Tomography (CT) Brain, Magnetic resonance imaging (MRI)may or may not accompanied with angiogram or venogram as per the patient clinical characteristic of patient. The treatment given to the patient was recorded. The improvement or deterioration in patient clinical condition was recorded and treatment was revised as per the requirement by the concern Unit.*

Conclusion- *The patients of stroke with age> 60 years had significantly high mortality (p value = 0.042 (<0.05).The patients of stroke who reach the hospital within 3 hours had significantly less mortality (p value =0.5)*

Keyword- *stroke, venogram, renal function test.*

MATERIAL & METHODS

Study area and design- This study was carried out in the Department of Medicine, MGM Medical College and M.Y. Hospital, Indore, from 2009 to 2013.We included 100 consecutive patients of strokes admitted to intensive care unit under medicine/neurology services.

Ethical consideration- All patients or relative provided valid informed written consent for participation. The protocol was approved by institution ethics committee.

Patient's selection criteria-

Inclusion criteria - All patients presented with acute stroke and willing to give consent for participation

Exclusion criteria- Patients with known Multi-system diseases or multi-organ failure where the symptomatology of stroke is confounded.Patients with known severe / multiple metabolic abnormalities. Patients with history of head injury.Patients with known history of seizure disorders. (Possibility of Post-ictal state), Prisoners and orphans were not included.

OBERVATION & DISCUSSION

This study was carried out in the Department of Medicine, MGM Medical College and M.Y. Hospital, Indore, from 2009 to 2013. We included 100 consecutive patients of strokes admitted to intensive care unit under medicine/neurology services. The data regarding the vital information, hospitalization, investigation and treatment was recorded. The following observations and results were drawn. In our study minimum and maximum age was 25 and 90 years. (Mean age= 56.77 years, SD-12.11 years). Majority of the patients were in 51-70 years of age (61%). 12% patients were in 25- 40 years age group, 21% patients were in 41-50 years age group, 4% patients were in 71-80 years age group, 2% patients were more than 80 years.

Age Group (Years)	Total No. of patients	Male	Female
≤ 40	12	10	2
41-50	21	10	11
51-60	30	14	16
61-70	31	19	12
71-80	4	0	4
>80	2	2	0
Total	100	55	45

GENDER DISTRIBUTION; Out of 100 patients enrolled in the study, 55 patients were male and 45 were female.

Gender	No. of patients	Alive	Death	Lost to follow up	Percentage
Male	55	37	16	2	55%
Female	45	23	22	0	45%
Total	100	60	38	2	100%

Odds ratio = 0.4521
Confidence interval = 0.1975 -1.0347
P value = 0.0602 (>0.05)

TIME OF HOSPITALIZATION AFTER SYMPTOM ONSET AND OUTCOME

Only 32% patients reached the hospital within 3 hours of symptom onset and 53.12% of these patients died on 6 months follow up. The remaining 68% patients reached the hospital after 3 hours of symptom onset. Among these 68% patients, 2% patients cannot be followed up and 31.81% patients died on 6 months follow up.

Time of hospitalization	Live	Death	Total
< 3 hours	15	17	32
>3 hours	45	21	66
TOTAL	60	38	98

Likelihood Ratio = 0.044
P value = 0.042 (<0.05)

CONCLUSION

The mean onset of stroke for men in India ranges from 63-65 years for men and 57-68 years for women (Bhattacharya et al 2005, Dalal et al2008, and Sridharan et al 2009). Surveillance study from Bangalore by Dr. D. Nagaraja showed that the mean age of stroke patients was 54.5 (± 17.0)year, with two thirds (65.6%) being 50+ and 18 per cent below 40 year.

In our study majority of the patients were in 51-70 years of age (61%). 12% patients were in 25- 40 years age group, 21% patients were in 41-50 years age group, 4% patients were in 71-80 years age group, 2% patients were more than 80 years

In our study the mean age of patients with stroke was 56.77 years with standard deviation of 12.05 years. (56±12.05 years) In it the mean age of male was 55.52 years with standard deviation of 12.09 years. (55.52±12.09 years) The mean age for females was 58.28 with standard deviation of 10.82 years.(58.28±10.82 years). The mean age of who died at the end of 6 month follow up was 56.71 years with standard deviation of 12.97 years.(56.71±12.97 years).

Indian studies have shown that about10% to 15% of strokes occur in people below the age of 40 years (Feigin 2007). Higher proportions of younger individuals are affected in India compared to developed countries. Data from our study match in this regard with 12% patients were having the age less than or equal to 40 years.

TIME OF HOSPITALIZATION

In our study 32.78% urban patient reached the hospital with first 3 hours but only 18.51% rural patient reached to the hospital within first 3 hours. 25.92% rural patient reached hospital after 24 hours while the 19.67% urban patients reached hospital after 24 hours. Hence there is clear delay of time for rural patients to get immediate medical services. Only 54% of the patients reached to the hospital within 6 hours, indicating lack of emergency services in our area. There was almost significant (p value = 0.053) delay in rural patients reaching to hospital as compared to urban patients.

There was a significant positive outcome noted in patients who reach the hospital within 3 hours as compared to the patients who reach the hospital after 3 hours. (p value = 0.042)

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