Original Article

DEMOGRAPHIC CHARACTERISTICS OF PATIENTS PRESENTING WITH ISCHEMIC STROKE AT SERVICES HOSPITAL LAHORE.

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Objective: To determine the demographic characteristics of patients presenting with stroke.

Methods: Retrospective cross sectional survey was conducted using a 20 point stroke questionnaire.

Results: 132 patients were included in study. The mean age of patients presenting was 62.1±12.3 years. 66.67% patients were diabetic. Patients reached the hospital on average within 2 hours 18 minutes from symptom onset. Most patients had onset of symptoms at night time. Motor symptoms were present in a vast majority of cases.

Conclusions: Patients were of a younger age than the worldwide average. Surprisingly our study showed diabetes to be more prevalent in the patients than hypertension. Most patients reached within the thrombolysis window. Attendants weren't aware that their patients had symptoms of stroke.

Keywords: Ischemic, stroke, demography, lahore.

Introduction

Stroke is a medical condition in which poor blood flow to the brain results in cell death.[1] Ischemic stroke occurs as a result of an obstruction within a blood vessel supplying blood to the brain. It accounts for 87 percent of all stroke cases.[2] Stroke accounts for 85.5% of mortality due to all stroke deaths worldwide.[3] The main neurological symptoms observed during or after stroke are sensory-motor disorders, cognitive impairment, visual impairments, speech disorders, coordination disorders, and swallowing problems.[4,5] Besides, the necessity of treatment strategies, rapid evaluation of stroke patient clinical clues, and results interpretation is equally important for emergency stroke management.[6,7] TPA can be given as the treatment of stroke upto 4.5 hours of symptom onset.[8] Mechanical Thrombolectomy by using a stent retriever device is strongly recommended within 6 hours of symptom onset.[9] The rationale of this study is to establish demographic characteristics of patients presenting with ischemic stroke presenting in one of the biggest tertiary care hospitals of Pakistan. Thus we can have an idea as to the risk factors, co-morbidities, history, symptoms on presentation and recognition of stroke in local patients. This can aid in rapid diagnosis of patients that is of utmost value in stroke patients.

Methods

This is a retrospective cross sectional study of 132 patients presenting in the emergency department of services hospital Lahore between February to May 2018. 132 patients included with simple random sampling technique and were those with new onset changes seen on CT scan confirmed as those of Ischemic Stroke by the radiologist.

Demographic characteristics, symptoms, risk factors and co-morbidities of patients were identified, enquired and noted. A 20 items stroke questionnaire was developed and filled by the doctors for every patient individually. Questions were asked from the patient directly or the closest relative available after taking proper informed consent. The responses were entered and analyzed using SPSS version 20.0 (IBM Co., Armonk, NY, USA). The quantitative data like age in years represented as mean standard deviations, whereas qualitative data like symptom recognition as frequency distribution. As the study was a cross sectional survey the requirement for ethical committee approval was waived.

Results

Out of our total 132 patients 74(56.06%) were male and 58(43.94) were female. The mean age of presentation was 62.1±12.3 years. The time duration from onset of symptoms to reaching services hospital was 2.3±2.87 hours. The patients travelled on average 53.5±31.25km to reach Services Hospital Lahore. The respondents on average had 6.75±2 family members.

120(90.91%) were married and 12(9.09%) were unmarried, divorced or widowed. As for the

education, 17(12.88%) received no formal education, 65(49.25%) were educated till primary, 34(25.76%) had done their Matriculation and 16(12.12%) were graduates.

37(28.03%) lived in a separate family whereas 95(71.97%) were from a joint family setup. A staggering 66.67% of patients were diabetic, 57.58% were hypertensive and 43.18% had ischemic heart disease, 71(53.78%) patients were smokers. Only 11(8.33%) were counseled that they may have a stroke whereas 121(91.67%) received no such counseling. Only 20(15.15%) of patients were previously taking medication for any condition. 24 patients (18.18%) had history of previous stroke/TIA. 24 patients (18.18%) had family history of stroke. 22 patients(16.67%) had stroke onset in morning, 38(28.79%) in evening and a majority 72(54.55%) had symptoms that started at night time. 103(78.03%) patients presented on an ambulance and only 27 (20.45%) chose to come on own transport. A vast majority, 118(89.39%) of patients presented with motor symptoms, 24 had altered state of consciousness (18.18%), Sensory symptoms were present in 17(12.88%) and speech impairment was present in 35(26.55) cases. Attendants of only 16 (12.12%) patients recognized they were having symptoms of stroke, whereas 116(87.88%) attendants had no idea that the symptoms were those of stroke.

Table-1: Risk factors.

Risk Factors	Present	Absent	Percentage
Diabetes	88	44	66.67%
Hypertension	76	56	57.6%
Ischemic Heart Disease	57	75	43.2%
Smoking	71	61	53.8%

Table-2: On previous medication.

On Medical	No. of Patients	Percentage
Yes	20	15.15%
No	112	84.85%

Table-3: Symptom of noset.

Symptom	No. of patients	Percentage
ASOC	24	18.88%
Speech	35	26.55%
Motor	118	89.39%
Sensory	17	12.88%

Table-4: Recognition as stroke.

Recognized as stroke by attendants	No. of Patients	Percentage
Yes	16	12.12%
No	116	87.88%

Discussion

Advancing age is a risk factor for stroke[10]and it is reflected in our study as the average age was 62 but as over 70% of all worldwide strokes occur after the age of 65,[11] among stroke victims, older adults have a higher mortality rate and increased risk of disability.[12-14] People in our study presented with stroke at an earlier age. The time between onset of symptoms and presentation was on average 2 hours 18 minutes, thus the majority of the patients could be thrombolised if facilities were provided. The patients traveled on average 53 km to reach services hospital so the majority of time spent between the onset of symptoms and presentation was in travailing. 66% of patients who presented were Diabetic. It is known that people with Diabetes are more likely to have a stroke.[15,16,17] Population based registries of stroke have reported a global prevalence of DM ranging from 9.5% to 20%[18,19,20] This is a huge difference and needs to be evaluated in further studies. 57.7% of patients were hypertensive. Hypertension is a known risk factor for Ischemic Stroke.[21] A majority of patients presented with motor symptoms which is consistent with study done by Kennedy Rl.[22] 78.03% of patients arrived in emergency on ambulances thus the system of ambulances is extremely vital in this time dependant management scenario and should be strengthened further. Only 12.12% attendants were aware that the patients had symptoms of stroke. This shows a lack of understanding and recognition of stroke and its symptoms by our common public.

Conclusion

Ischemic stroke is a major disease burden to our society. Majority of people are able to reach the emergency department within the thrombolysis window of 4 hours, thus emergency thrombolysis for patients of stroke would be common if started. Diabetes is a risk factor for stroke, and our study shows high prevalence of diabetes in patients presenting with stroke. While the degree of association might be less than our study has shown, this surely demands a more extensive research. Much needed is the education of our public about stroke and its symptoms, which will facilitate the urgent response needed in the management.

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References

1. "What Is a Stroke?" www.nhlbi.nih.gov/March 26, 2014. Archived from the original on 18 February 2015. Retrieved 26 February 2015.

2. Benjamin EJ, Blaha MJ, Chiuve SE, et al. on behalf of the American Heart Association Statistics . Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics2017 update: a report from the American Heart Association. Circulation. 2017;135:e229-e445.

3. Feigin VL, Lawes CM, Bennett DA, Barker-Collo SL, Parag V. Worldwide stroke incidence and early case fatality reported in 56 population-based studies: a systematic review. Lancet Neurol. 2009;8(4):355369. doi: 10.1016 /S1474-4422(09)70025-0.

4. Oğul E. Beyindamarhastalıkları. In Oğul E, editor. KlinikNöroloji, 1st ed. Ankara: Nobel & GüneşKitapBasım; 2002. p. 1-27.

5. Kennedy RL. Management of acute stroke. The Lancet Neurology 2002; 1: 41-50

6. Kumral E. Serebrovasküler-hastalıklarınepidemiyolojisi. In Sevin Balkan, editor. Serebrova-sküler Hastalıklar. 1st ed.Ankara: GüneşTıpKitabevleri; 2009. p. 37-50.

7. Heart Disease and stroke statistics -2007 Update. A report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Circulation 2007; 115: 69-171.

8. Del Zoppo GJ, Saver JL, Jauch EC, Adams HP. Expansion of the time window for treatment of acute ischemic stroke with intravenous tissue plasminogen activator: a science advisory from the American Heart Association /American Stroke Association. Stroke. 2009;40(8):29452948.

9. Powers WJ, Rabinstein AA, Ackerson T, et al. Guidelines for the early management of patients with acute ischemic stroke regarding: a guideline for healthcare professionals from the American Heart Association /American Stroke Association. Stroke. 2018;2018;49:e46e110.

10. "Influence of age and health behaviors on stroke risk: lessons from longitudinal studies" Journal of the American Geriatrics Society vol. 58 Suppl 2,Suppl 2 (2010): S325-8.

11. Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, et al. Heart disease and stroke statistics2015 update a report from the american heart association. Circulation. 2015;131:e29e322.[PubMed]

12. Appelros P, Nydevik I, Viitanen M. Poor outcome after first-ever stroke predictors for death, dependency, and recurrent stroke within the first year. Stroke. 2003;34:122126. [PubMed]

13. Weimar C, Ziegler A, König IR, Diener H-C. Predicting functional outcome and survival after acute ischemic stroke. J Neurol. 2002;249:888895. [PubMed]

14. Casper M, Croft JB, Nilasena DS, Nwaise IA Centers for Medicare & Medicaid Services. Atlas of stroke hospitalizations among medicare beneficiaries. US Department of Health and Human Services, Centers for Disease Control and Prevention; 2008.

15. Putaala J, Liebkind R, Gordin D, et al. Diabetes mellitus and ischemic stroke in the young: clinical features and long-term prognosis. Neurology. 2011;76:18311837.

16. Weimar C, Ziegler A, König IR, Diener H-C. Predicting functional outcome and survival after acute ischemic stroke. J Neurol. 2002;249:888895.

17. Johnston K, Connors A, Wagner D, Knaus W, Wang X-Q, Haley EC. A predictive risk model for outcomes of ischemic stroke. Stroke. 2000;31:448455.

18. Benatru I., Rouaud O., Durier J., Contegal F., Couvreur G., Bejot Y., and al. Stable stroke incidence rates but improved case-fatality in Dijon, France, from 1985 to 2004 Stroke 2006 ; 37 : 1674-1679 [cross-ref]

19. Rothwell P., Coull A., Giles M., Howard S., Silver L., Bull L., and al. Change in stroke incidence, mortality, case-fatality, severity, and risk factors in Oxfordshire, UK from 1981 to 2004 (Oxford Vascular Study) Lancet 2004 ; 363 : 1925-1933 [cross-ref]

20. Anderson C., Carter K., Hackett M., Feigin V., Barber P., Broad J., and al. Trends in stroke incidence in Auckland, New Zealand, during 1981 to 2003 Stroke 2005 ; 36 : 2087-2093 [cross-ref]

21. Lewington S, Clarke R, Qizilbash N, Peto R, Collins R; Prospective Studies Collaboration. Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies [published correction appears in Lancet 2003; 361: 1060]. Lancet 2002; 360: 1903-13. [CrossRef]

22. Arboix A, Cendrós V, Besa M, García-Eroles L, Oliveres M, Targa C, Balcells M, Comes E, Massons J. Trends in risk factors, stroke subtypes and outcome. Nineteen-year data from the SagratCor Hospital of Barcelona stroke registry. Cerebrovasc Dis 2008; 26: 509-16. [CrossRef]15. Kennedy RL. Management of acute stroke. The Lancet Neurology 2002; 1: 41-50