ISSN (Print): 2663-9491 ISSN (Online): 2789-6897

Original Article

Sociodemographic Characteristics of the Patients Having Acute Stroke

DOI: dx.doi.org

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Received: 19 November 2024
Accepted: 28 November 2024
Published: 15 December 2024

Published by:
Gopalganj Medical College,
Gopalganj, Bangladesh

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ABSTRACT

Introduction: *Stroke is a growing public health concern in low—and middle-income countries. Different types of stroke and their association with the socio-demographic characteristics of the patients are identified here. The aim of the study is to investigate the sociodemographic characteristics of the patients having acute stroke.* ***Methods & Materials:*** *This cross-sectional study was carried out at Holy Family Red Crescent Medical College Hospital in Dhaka over six months from January 2016 to June 2016. A total of 100 patients with acute stroke were included in the study following inclusion and exclusion criteria. Data were collected and analyzed using SPSS version 26.0 for Windows (SPSS Inc., Chicago, Illinois, USA).* ***Results:*** *It was observed that almost half (49.0%) of patients belonged to age 51-70 years. The mean age was found 65.2±15.1 years with a range from 35 to 95 years. 62.0% of patients were male and 38.0% of patients were female. From the current study, it was observed that 68.0% of patients had headaches, 28.0% of patients had vomiting, 26.0% of patients had vertigo, and 9.0% of patients had seizures. It was observed that 88.0% of patients had hypertension, 46.0% of patients had diabetes mellitus, 29.0% of patients had dyslipidemia and 10.0% of patients had ischaemic heart disease.* ***Conclusion:*** *This study was undertaken to observe the pattern of sociodemographic characteristics in acute stroke patients. Headache and vomiting were more common premonitory symptoms. However, a family history of hypertension and a family history of diabetes mellitus were more frequent.*

(The Insight 2024; 7(1): 398-406)

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Keywords: *Sociodemographic, Ischaemic Stroke, Acute Stroke*

INTRODUCTION

A neurological deficit of sudden onset with focal rather than global neurological symptoms lasting more than 24 hours or resulting in death before 24 hours, and in which symptoms are presumed to be of non-traumatic origin after adequate investigation," is the clinical definition of stroke[1]. According to Allen et al. (2010), focal brain dysfunction brought on by focal ischemia or hemorrhage is referred to as a stroke[2]. Stroke is defined by the WHO as a focused disruption of cerebral function with rapidly developing clinical indications that lasts more than 24 hours or results in death with no evident cause other than vascular origin[3]. Although stroke is becoming a more significant public health issue in low- and middle-income nations, no comprehensive investigation has been carried out to identify potential causes of stroke in the majority of these nations. The average age of stroke in demographically developed nations is approximately 73 years old, which reflects the older age distribution of these nations. Approximately 1.6 out of every 1,000 people will have their first stroke, and 0.42 out of every 1,000 people will have their first transient ischaemic attack. Because of the varied age structure of the population brought about by greater mortality rates and competing causes of death, stroke will occur at a younger average age in less developed regions[4]. According to Siddiqui et al. (2012), electrolyte imbalances are frequently observed in acute stroke settings[5]. The most prevalent disturbances were hypernatraemia, hyponatremia, and hypokalaemia[6,7]. Recent studies on electrolyte imbalances have examined their prevalence, risk factors, and correlation with various medical conditions in addition to their neuroendocrine mechanism[6]. Early identification is crucial for preventing and minimizing the devastating aftereffects of stroke, and identifying the kind of stroke is a crucial part of the clinical care of stroke patients. Although a history and physical examination can be very helpful in determining the kind of stroke, changing diagnostic pictures is the primary means of classifying different forms of stroke[8-10]. It is well known that the incidence of stroke rises with age; more precisely, at the age of 45, the incidence doubles every ten years. Patients 65 years of age or older account for over 70% of stroke cases[11]. Compared to women (1 in 6), males (1 in 5) often have a higher lifetime risk of stroke. Men are more likely than women to have a stroke while they are younger, and women are more likely to have a stroke when they are older since they typically live longer[12]. The number of strokes in the Middle East is rising quickly[13]. Age, hypertension, a history of stroke or transient ischaemic attack (TIA), diabetes mellitus, hypercholesterolemia, smoking, and atrial fibrillation are the main stroke-associated variables, according to certain research conducted in this region of the world[14]. Stroke is more common among those with diabetes mellitus, hypertension, or excessive

cholesterol, according to several national studies. Among the Eastern part of Saudi Arabia, the frequency was reported to be 178 per 100,000[15,16]. Like in other regions of the world, the prevalence of stroke is rising quickly in Saudi Arabia and is becoming a leading cause of disease and fatalities. In Saudi Arabia, stroke is more common in individuals in their sixth decade of age, with a definite male preponderance, according to Akbar and Mushtaq[17]. Almekhlafi's hospital-based study indicates that Saudi Arabia is seeing an increase in the prevalence of strokes. Stroke and its aftereffects accounted for 32% of the study's 548 participants' deaths[18]. The aim of the study is to evaluate the socio-demographic characteristics of the patients having acute stroke.

METHODS & MATERIALS

This cross-sectional study was carried out at Holy Family Red Crescent Medical College Hospital in Dhaka over six months from January 2016 to June 2016. The research targeted adult patients admitted to the Department of Medicine with an acute stroke. A total of 100 patients with acute stroke were included in the study. Eligibility criteria required that participants were admitted within 48 hours of stroke onset, with a diagnosis of infarction or hemorrhage confirmed by CT or MRI brain imaging, serum electrolytes measured within 48 hours of stroke onset, and written consent provided by the patient or a family member. Exclusion criteria included patients admitted more than 48 hours after stroke onset, CT or MRI imaging revealing non-stroke conditions (such as tumors, inflammatory or traumatic lesions), absence of CT or MRI imaging, or cases where the patient was in a critical condition and unable to provide a history and no family member was available to provide consent. Data were collected by a structured questionnaire containing all the variables of interest. Statistical analyses were carried out by using the Statistical Package for Social Sciences version 26.0 for Windows (SPSS Inc., Chicago, Illinois, USA). P values <0.05 were considered statistically significant.

RESULTS

Table I shows the demography variable of the study patients, it was observed that almost half (49.0%) of patients belonged to age 51-70 years. The mean age was found 65.2±15.1 years with a range from 35 to 95 years. 62(62.0%) patients were male and 38(38.0%) patients were female, 48 (48.0%) patients were Illiterate, 37(37.0%) patients were housewives. 87(87.0%) of the patients came from middle income family and 47(47.0%) patients affected during working (**Table I**).

Table I: Distribution of the Study Patients by Demographic Characteristics (*n*=100)

Demographic characteristics of patients	Number of patients (*n*=100)	Percentage (%)
Distribution of patients according to age (in years)		
35-50	21	21
51-70	49	49
>70	30	30
Mean ± SD 65.2±15.1		
Range (min-max)	35	95
Distribution of patients according to Sex		
Male	62	62
Female	38	38
Distribution of patients according to educational status		
Illiterate	48	48
Primary	18	18
SSC	10	10
HSC	9	9
Graduate	14	14
Post-graduate	1	1
Distribution of patients according to occupational status		
Service	4	4
Business	28	28
Cultivator	29	29
Housewife	37	37
Others	2	2
Distribution of patients according to income status		
Low	12	12
Middle	87	87
High	1	1
Distribution according to the state of patients		
Sleep	23	23
Work	47	47
Excitement	3	3
Rest	21	21
Eating	6	6

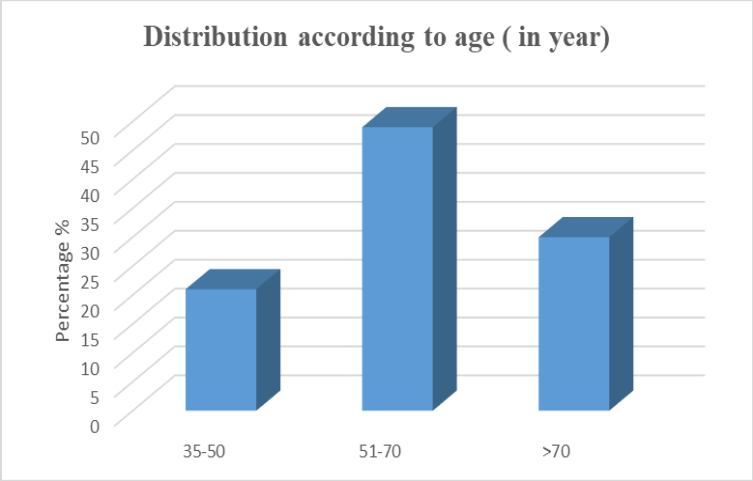

Figure – 1: The Bar Diagram Shows the Age (in years) Distribution of the Study Patients

It was observed that almost half (49.0%) of patients belonged to age 51-70 years. The mean age was found 65.2±15.1 years with a range from 35 to 95 years (**Figure 1**).

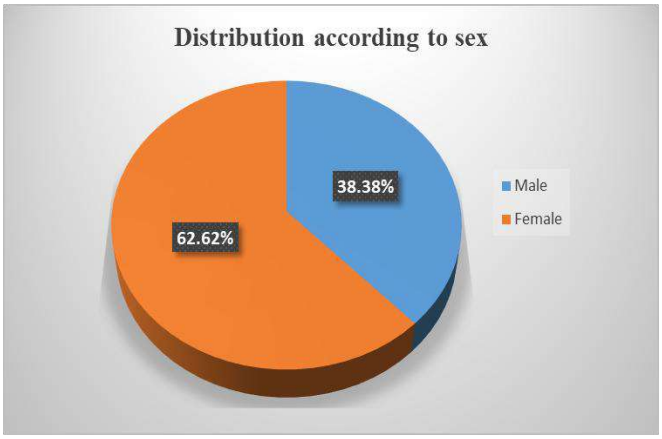

Figure – 2: Pie Chart Shows the Sex Distribution of the study patients

Figure 2 shows 62 (62.0%) patients were male and 38(38.0%) patients were female. **Table II** shows the premonitory symptoms of the study patients it was observed that 68 (68.0%) patients had headaches, 28(28.0%) patients had vomiting, 26(26.0%) patients had vertigo, and 9(9.0%) patients had seizures.

Table – II: Distribution of the Study Patient's Premonitory Symptoms (*n*=100)

Premonitory symptoms	Number of patients (n=100)	Percentage (%)
Headache	68	68
Vomiting	28	28
Vertigo	26	26

Table III shows the family history of risk factors of the study patients, it was observed that 88 (88.0%) patients had hypertension, 46(46.0%) patients had diabetes mellitus, 29(29.0%) patients had dyslipidemia, and 10(10.0%) patients had ischaemic heart disease.

Table III: Distribution of the Study Patients Family History of Risk Factors (*n*=100)

Family History of Risk Factors	Number of patients (n=100)	Percentage (%)
Hypertension	88	88
Diabetes mellitus	46	46
Dyslipidaemia	29	29
Ischaemic heart disease	10	10

Table IV shows the diagnosis on CT scan or MRI findings of the study patients, it was observed that more than two-thirds (68.0%) patients had an ischaemic stroke, 24(24.0%) patients had intracerebral hemorrhage, and 8(8.0%) patients had subarachnoid hemorrhage.

Table – IV: Distribution of the Study Patient's Diagnosis on CT Scan or MRI Findings (*n*=100)

CT scan or MRI findings	Number of Patients (n=100)	Percentage (%)
Ischaemic stroke	68	68
Intracerebral hemorrhage	24	24
Subarachnoid haemorrhage	8	8

DISCUSSION

A total of 100 patients with acute stroke admitted to the Department of Medicine, in Holy Family Red Crescent Medical College Hospital, Dhaka from January 2016 to June 2016 were included in this study. In present study, it was observed that almost half 49.0% of patients belonged to age 51-70 years. The mean age was found 65.2±15.1 years with a range from 35 to 95 years. In our country, Hasan et al. (2013) reported that the incidence of stroke increases with increasing age, where

their study found 24.28% of patients were in between the 51–60 years age group, 20% between 61 – 70 years age group, 18.57% above 70 years of age and 18.57% patients were between 20 – 45 years age group[19]. In another study in Bangladesh Iqbal et al. (2010) found most of the patients (30%) were in between the group of 51-60 years age and the next prevalence group was 61-70 years (22%) ages[20]. Siddiqui et al (2012) found the maximum number of patients (29%) were in between the 51-60 years age group followed by (22%) in the 61-70 years age group[5]. In India Wali and Patil (2016) reported that the most common age group affected was 45-60 years, which is consistent with the current study[21]. On the other hand Winter et al. (2008) found that the mean age was 66.9±10.9 years and 68.0±14.1 years in males and females respectively[22]. Similarly, Vemmos et al. (2011) found the mean age of their study patients was 69.7 years with a range from 18–103 years[23]. In another study Jood et al. (2004) found the mean age at first stroke diagnosis was 75.5 years for ischemic stroke, 73.8 years for hemorrhagic stroke, and 74.0 years for unspecified stroke[24]. The above-mentioned studies are higher than the current study, the higher mean age may be due to geographical variations, racial, and ethnic differences, genetic causes and different lifestyles may have significant influence on acute stroke in diabetics. In the current study, it was observed that acute stroke is predominant in male subjects, where 62.0% of patients were male and 38.0% were female, which closely resembled Wali & Patil (2016), Mitchell et al. (2015), Hasan et al. (2013), Siddiqui et al (2012) and Vemmos et al. (2011)[5,19,21,23,25]. On the other hand, Li et al. (2005) and Suk et al. (2003) found female predominant[26,27]. In present series, it was observed that 48.0% of patients were Illiterate, female patients were mostly (37.0%) housewives and the majority (87.0%) patients came from middle-income families and 47.0% patients affected during working. Li et al. (2005) found that almost two-thirds (65.5%) of patients had completed low (≤8 years) education [26]. The majority of literature is devoted to exploring the relationship between hypertension and stroke (Abott et al. 1994 and Hubert et al. 1983)[28,29]. In another study Suk et al. (2003) found 31.0% of patients had completed higher than high school [27]. Regarding the premonitory symptoms it was observed in this current study, that 68.0% of patients had headaches, 28.0% of patients had vomiting, 26.0% of patients had vertigo, and 9.0% of patients had seizures. In our country, Hasan et al. (2013) reported that most hemorrhagic stroke patients present with headaches and vomiting[19]. Vomiting is an important cause of electrolyte disturbances, which is comparable with the current study. In this present series, it was observed that 88.0% of patients had a family history of hypertension, 46.0% had a family history of diabetes mellitus, 29.0% had a family history of dyslipidemia and 10.0% had a family history of ischaemic heart disease. Musa et al (2015) obtained in their study that predisposing factors for the development of stroke were hypertension at 43.6%, and diabetes

mellitus at 16.5%. Stroke patients had a strong family history of hypertension 12.23%, diabetes mellitus 10.11%, and stroke 3.72%[30]. According to CT scan or MRI findings in this present study, it was observed that more than two-thirds 68.0% of patients had an ischaemic stroke, 24.0% of patients had an intracerebral hemorrhage and 8.0% of patients had subarachnoid hemorrhage. Siddiqui et al (2011) found 53.0% of patients had ischaemic stroke, 45% had Intracerebral hemorrhage (ICH) and only 2% had Subarachnoid hemorrhage (SAH) in CT scan findings, which is comparable with the current study[31].

Conclusion

This study was undertaken to observe the pattern of sociodemographic characteristics in acute stroke patients. Most of the patients were in the 7th decade and predominantly male predominant. The majority of patients had poor educational levels, female patients were mostly housewives, cultivator/business was more common and the majority of the patients came from middle-income families. Headache and vomiting were more common premonitory symptoms. However, a family history of hypertension and a family history of diabetes mellitus were more frequent. Ischaemic stroke was predominant in this study.

Limitations of the Study

The present study was conducted over a very short period with a small sample size and the study population was selected from one selected hospital in Dhaka city, so the results of the study may not reflect the exact picture of the country.

Recommendations

A large sample size with a longer study period is required to get more appropriate results. The area of selecting a large study population will also help to provide good results.

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