

Prevalence of Ischemic and Hemorrhagic Stroke among Geriatric Patients Admitted in the Public Tertiary Care Hospitals of Peshawar

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Abstract

Background: Stroke is a life-threatening medical condition that can result in lifelong brain impairment, complications, and demise. Stroke is the world's second biggest cause of mortality and could soon overtake as the biggest cause of death globally. It has

2 major pathological types' i.e., ischemic stroke and hemorrhagic stroke. Hypertension, diabetes mellitus, cardiac diseases, smoking, physical inactivity and age are the risk factors that contribute in the occurrence of a stroke.

Objective: To find out the epidemiological status of stroke types among patients admitted in the public tertiary care hospitals of Peshawar.

Methodology: A descriptive cross-sectional study was carried out to determine the prevalence of stroke types in tertiary care hospitals of Peshawar. The sample size calculated for the research study was 109. Convenience sampling technique was used in this study.

Results: This study was performed among 109 research participants. The most affected were males as 51.13% and females were 45.87%. And the rate of ischemic stroke was 71% while that of hemorrhagic stroke were 28%.

Conclusion: the current research study concluded that majority of the patients had ischemic stroke as compared to the hemorrhagic stroke.

Keywords: prevalence; stroke; ischemic stroke; hemorrhagic stroke

Introduction

Stroke is a life-threatening medical condition that can result in lifelong brain impairment, complications, and demise. Stroke is the world's second biggest cause of mortality and could soon overtake as the biggest cause of death globally. A stroke is the loss of brain functions that occurs rapidly as a result of a disruption in the blood vessels providing blood to the brain. This can be produced by ischemia from a thrombosis or embolism, or a hemorrhage. As a result, the brain's damaged area is unable to operate, causing one or more limbs on one side of the body to become immobile, inability to recognize or produce speech, or seeing only one side of the visual field (Marwat, Usman, & Hussain, 2009). According to Mumtaz Ali Marwat, et al. an observational study was conducted in Pakistan under the title Stroke and its relationship to risk factors. Total of 88 people were included in analysis. The mortality rate in stroke was 27.2% (Marwat, Usman, & Hussain, 2009). According to Tapas Kumar Banerjee,

et al. a population-based survey was conducted in different parts of India under the title Epidemiology of stroke in India that reviewed data from last decade of about 100,000 patients and the prevalence rate for stroke was 1.2% (Banerjee & Das, 2006).

Ischemic stroke happens when a blockage in the blood vessel of the neck or brain occurs, and is the most common type of stroke. This blockage can be produced by, "the development of a clot in a brain or neck blood artery, known as thrombosis; the migration of a blood clot from one section of the body to another such as the heart to the brain, known as embolism; or a serious narrowing of a cerebral artery, known as "stenosis" (Kummer et al., 2019). In hemorrhagic stroke a blood vessel on surface of the brain ruptures which allow the blood to enter the gap between the skull and brain or when a faulty artery in the brain ruptures, causing blood to flood the surrounding tissue (Shah et al., 2013).

Methods

The study design was a descriptive cross-sectional study (from February 2022 to July 2022). After approval of Advance Studies and Research Board (ASRB), graduate committee and Ethical board of Sarhad University of Science and Information Technology the data was collected. The sample size calculated for this study was 109 through Raosoft. Non-probability Convenience sampling technique was used and data was analyzed by using software SPSS [25].

The screenshot shows the Raosoft sample size calculator interface. It includes the following fields and values:

- What margin of error can you accept? 5%
- What confidence level do you need? 95%
- What is the population size? 150
- What is the response distribution? 50%
- Your recommended sample size is 109

Inclusion Criteria

- Those patients who are admitted in hospitals.
- Both male and female patients are included.
- Individual's age 65 and above are included.
- Patients suffering from both hemorrhagic and ischemic stroke are included.
- Acute, sub-acute and chronic, all stages of stroke are included.

Exclusion Criteria

- Those patients who do not want to give data by will are excluded.
- Stroke due to any accident or whiplash injury is excluded.

Data Collection Procedure and Permission Taken from Suit Research and Ethical committee

A relevant questionnaire was distributed among the attendants of patients and it was filled by attendants of the patients. Data was collected through a self-modified questionnaire for verifying stroke free status (QVSFS). After obtaining approval from the research committee, permission from director SIAHS SUIT Peshawar and from the head of the respective hospitals were taken, data were collected from the stroke, patients admitted in the public tertiary care hospitals of Peshawar who were fulfilling the eligibility criteria of study. Data were collected through self-modified questionnaire for verifying stroke free status (QVSFS). The question-

naires were filled from the patients themselves or from/by their attendants.

Results

The main objective of this study was to find out the epidemiological status of ischemic & hemorrhagic stroke of geriatric population stroke, patients admitted in the public tertiary care hospitals of Peshawar. For this purpose, we took the data from geriatric population of age between 60 to 99 (n=109) in which the greatest percentage of stroke were in age group of 60-70 (55.0%), followed by the age group of 71-80 (31.19%), the age group of 81-90 (7.34%), and the age group of 91-99 (6.42%).

Age of Participants

Table 1: shows the gender of research participants. A total of 109 individuals were included in the study, with 59 (51.13%) of the males and 50 (45.87%) of females.

Age	Frequency	Percent
60-70	60	55.0
71-80	34	31.2
81-90	8	7.3
91-99	7	6.4
Total	109	100.0

Gender of research participants

Table 2: shows the weights of research participants in kg. In the sample size of 109 individuals, the greatest percentage 31 (28.44%) is found in the weight range of 55-65 kg. Followed by 54 (49.54%) is observed in the weight range of 66-75 kg. Another proportion is 21 (19.27%) in the 76-85 kg weight range. Lastly, only 3 (2.75%) in the 86-99 kg weight range.

Gender	Frequency	Percent
Male	59	54.1
Female	50	45.9
Total	109	100.0

Weight of research participants

Tables 3: shows the status of TIA/mini stroke among research participants of the 109 patients, 49 (45%) had TIA/mini stroke, whereas 60 (55%) had no history of TIA/mini stroke TIA/mini stroke in research participants.

Weight	Frequency	Percent
55-65 kg	31	28.4
66-75 kg	54	49.5
76-85 kg	21	19.3
86-99 kg	3	2.8
Total	109	100.0

Frequency		Percent
Yes	49	45.0
No	60	55.0
Total	109	100.0

Type of Stroke

Table 4: shows the type of stroke among 109 research participants, with 78 (71.56 %) having ischemic stroke and 31(28.44 %) having hemorrhagic stroke.

Quince		Percent	Valid Percent	Cumulativey
ischemic stroke	78	71.6	71.6	71.6
hemorrhagic stroke	31	28.4	28.4	100.0
Total	109	100.0	100.0	

Discussion

According to the study conducted in tertiary care hospital in Karachi by Fawad Taj, et.al a total of 159 patients were included in this audit with 104 males (65.4%) and 55 females (34.6%). Ischemic stroke was seen in 108 patients (67.9%), while 34 patients (21.4%) with hemorrhagic stroke. Hypertension was the most prevalent risk factor present in 78% (n=124) of the population, followed by the diabetes in 40.3% (n=64) and smoking 21% (n=33). [36]. Another study conducted by Nighat Musa, et.al in Peshawar in the year of august 2018 reported that Study results showed that 62% patients were males and 38% were females. Males age distribution less than 40 years were 24% and more than 41 years were 76%. Similarly, females were 21% and 79% respectively. Major medical risk factors found were hypertension, diabetes and cardiovascular diseases. The environmental risk factors were physical inactivity, smoking and obesity. The less common risk factors were alcohol and oral contraceptive use [8].

As our study shows the prevalence of stroke is more in males than females, a similar result were also found in the study conducted by Payam Sariaslani, et.al in Iran in the year of 2019 stating that the present study found the prevalence of stroke to be higher in men than in the women. Similar results to our study regarding association of hypertension to ischemic stroke from the above study conducted by Payam Sariaslani, et.al in Iran in year 2019 they stated that The present study investigated 122 patients the most important clinical risk factors associated with ischemic stroke in the study subjects comprised a history of hypertension, heart diseases, angina and internal and rheumatic diseases,

smoking, taking high-risk medications, diabetes mellitus and hyperlipidemia [37].

Conclusion

This study was performed among 109 research participants to find out the frequency of stroke in geriatric population in tertiary care hospitals of Peshawar. In current study we have concluded a high prevalence of ischemic stroke among adults aged 60 and above in tertiary care hospitals of Peshawar. The most affected were males as 51.13% and females were 45.87%.

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