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Research Article

**ANALYSIS OF FACTORS INFLUENCING SEVERITY IN
ACUTE ISCHEMIC STROKES**Dr Ujala Malik¹, Dr Tehrim Nisar¹, Dr Zunaira Kayani¹¹Rawalpindi Medical University**Article Received:** September 2020 **Accepted:** October 2020 **Published:** November 2020**Abstract:**

Introduction: Acute ischemic stroke is considered as one of the most common fatal diseases, in our times. **Objectives:** The main objective of the study is to evaluate the factors influencing severity in acute ischemic strokes. **Material and methods:** This cross sectional study was conducted in Rawalpindi Medical University during March 2019 to November 2019. All suspected strokes who presented to the ED within 24 h of onset of first symptoms were included in this prospective study. **Results:** In our study total 100 patients were enrolled mean age was 47.7 ± 10 years with minimum age of 18 years and maximum age of 65 years. Lesser patients belong to younger age group (18 years to 40 years) i.e. 30 while 70 belonged to elder age group i.e. 41 year to 65 years 30 % and 70% respectively. Out of which 32 (27.7 %) were male and 38 (72.3%) were female. **Conclusion:** It is concluded that Stroke severity is related to age and its etiology. There is also a possible inverse correlation between stroke severity and fasting triglyceride levels, which is seen predominantly in supra aortic large artery atherosclerotic and cryptogenic stroke etiologies.

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INTRODUCTION:

Acute ischemic stroke is considered as one of the most common fatal diseases, in our times. Those who survive strokes, suffer from their undesirable outcomes that include the subsequent long-term or sometimes life-long disability which constitutes a significant burden on patients' personal well-being and on the care givers as well. Stroke severity is one of the factors associated with disability. Stroke severity can be assessed and measured by clinical examination [1]. There are many scoring systems that quantify or measure stroke severity. One of these is National Institute of Health Stroke Scale (NIHSS), which is a validated and a widely used scoring system for this purpose. Currently, acute thrombolysis, revascularization, prophylaxis (preventing first or further strokes) and rehabilitation are the main domains of stroke therapy [2].

Stroke is one of the main causes of morbidity and mortality worldwide. In addition, as stroke is a main cause of disability in adults, there is a huge interest in improving the recovery of patients post-stroke [3]. A wide variety of factors are known to influence the outcome after stroke, most of which are clinical variables related with the disease (stroke severity, etiology, etc.), cardiovascular risk factors (hypertension, heart failure, etc.) and other demographic variables (age, sex, etc.). However, there are studies that present contradictory results, making the relationship between clinical variables and stroke outcome not so clear [4].

In addition, ischemic stroke is a complex disease with a substantial genetic component, the heritability of which ranges from 16% to 40% [3]. Several genome-

wide association studies (GWAS) have found genes associated with stroke risk and have been confirmed in independent studies [5]. However, with the exception of two recent GWAS, the studies performed to find genetic variables associated with stroke outcome are candidate gene studies that have not been consistently replicated [6].

Objectives

The main objective of the study is to evaluate the factors influencing severity in acute ischemic strokes.

MATERIAL AND METHODS:

This cross sectional study was conducted in Rawalpindi Medical University during March 2019 to November 2019. All suspected strokes who presented to the ED within 24 h of onset of first symptoms were included in this prospective study. The study performed into account the demographic data of the patient and few questions that were to be answered by the bystander. Following the filling up of pro forma, the bystander was interviewed using a Knowledge, Attitude and Practices (KAP) questionnaire. Data were statistically described in terms of range, mean \pm standard deviation (\pm SD), median, frequencies (number of cases), and relative frequencies (percentages) when appropriate.

RESULTS:

In our study total 100 patients were enrolled mean age was 47.7 ± 10 years with minimum age of 18 years and maximum age of 65 years. Lesser patients belong to younger age group (18 years to 40 years) i.e. 30 while 70 belonged to elder age group i.e. 41 year to 65 years 30 % and 70% respectively. Out of which 32 (27.7 %) were male and 38 (72.3%) were female (Table No. 1).

Table 01: Age stratification of sampled population

Age	Frequency	Percentage
20 - 40 years	30	30%
41 - 65 years	70	70%
Total	100	100.0%

Hypertension was present in 24 patients; smoking was present in 12 patients and 50 patients were diabetic.

Table 02: Frequency of risk factor in sampled population

Risk factors	Frequency	Percentage
Hypertension	24	24%
Smoking	26	26%
Diabetes	50	50%

Table 3: Results of cardiological assessment in ischemic stroke patients

Cardiac risk factors	Number	Percent
Rheumatic heart disease	36	21.6
Atrial fibrillation	44	26.3
Atrial myxoma	1	0.6
Prosthetic valve	3	1.8
Mural thrombus	3	1.8
Ischemic heart disease	15	9
Left ventricular hypertrophy	51	30.5

DISCUSSION:

In developed world, the number of strokes decreased by approximately 10% and, on the other hand, increased by 10% in developing countries between 1990 and 2010. In the Middle East region, stroke is considered as a major health problem which leads to significant disability and mortality with an expected increase in mortality rate which may reach the double by 2030 [7].

The most important predictors of outcome in the acute phase of stroke are stroke severity and the age of patient. Stroke severity can be assessed clinically, based on various parameters of neurologic impairment (e.g., altered mentation, motor deficit, language, visual field deficit, behavior) and the size and location of the infarction on neuroimaging with MRI or CT. Ischemic stroke mechanism, epidemiologic factors, comorbid conditions, and complications of stroke are other important factors that have an influence on stroke outcome [8].

There is also a possibility that high lipids especially triglycerides, may have a more positive role in acute ischemic strokes. It is a well-known fact that fats in general have a favorable effect on brain metabolism [9]. For example; fatty diets like ketogenic diet is well known to have a therapeutic effect in refractory epilepsy in children, although similar diet has not been thoroughly evaluated in adults with stroke or epilepsy. Thus more research is needed to elucidate the role of lipids/ triglycerides in during the acute phases of ischemic stroke. In supra aortic large artery atherosclerotic strokes pre stroke antiplatelet (aspirin, clopidogrel or both) and beta blocker use was significantly associated with lower stroke severity [10].

CONCLUSION:

It is concluded that Stroke severity is related to age and its etiology. There is also a possible inverse correlation between stroke severity and fasting triglyceride levels, which is seen predominantly in supra aortic large artery atherosclerotic and cryptogenic stroke etiologies. Finally, we conclude that hypertension was one of the most prevalent risk factor that is probably

due to the high prevalence of this disease in older patients.

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