INTRODUCTION

Cerebrovascular disease has become the second leading cause of death globally. Stroke is a debilitating consequence of cerebrovascular disease which has long term implications for the patients as well as the whole family. Despite being such a distressing illness, stroke still remains a preventable disease. Stroke prevention strategies target high risk patients by identifying modifiable and non-modifiable risk factors. These risk factors need to be addressed through a multi-pronged strategy including pharmacological and non-pharmacological interventions.\(^1\,^2\,^3\)

There is strong clinical evidence that using multiple drugs from different classes to target the major risk factors that are implicated in the aetiology of stroke can lead to a substantial risk reduction. Reducing blood pressure and use of aspirin (anti-platelet therapy) can lead to lesser frequency of strokes in at risk population. Similarly, use of statins to target hyperlipidaemia also results in reduced risk in patients who are at moderate to high risk for stroke.\(^1\,^2\,^4\)

Many large cohort studies have repeatedly identified a relationship between the incidence of ischaemic heart disease and serum cholesterol levels. Many studies also point to a relationship between stroke and serum cholesterol.\(^2\,^4\,^5\) In a study conducted by Lipovetski BM, dyslipidaemia was present in 87% of patients with coronary heart disease, and 89% of patients with cerebrovascular disease.\(^6\)

The aim of this study was to identify the frequency of hypercholesterolemia as a modifiable risk factor for ischaemic stroke in our local population.

MATERIAL AND METHODS

This hospital based descriptive cross sectional study was conducted on 90 consecutive patients admitted in the department of Medicine Ayub Teaching Hospital with clinical features of stroke. Patients >18 years of age of either gender, with a focal neurological deficit lasting more than 24 hours with infarct on CT scan were included in this study. Patients on drugs such as thiazide diuretics, beta blockers, and corticosteroids were excluded from the study. Informed consent was taken.

Venous blood sample was collected from each subject after an overnight fast and was sent to the hospital’s laboratory. Auto analyser MERCK SELECTRA 2 was used for determination of serum total cholesterol. Data was analysed using SPSS-22 and p-value <0.05 was considered significant.

RESULTS

A total of 90 patients were included in the study out of which 55 (61.1%) were males and 35 (38.9%) females. The mean age of the patients was 64.44±11.5 years. Mean age of male patients was 65.31±11.85 and female as 63.09±10.97 years. The total number of patients below 50 years was 11 (12.21%), 46 (51.1%) in the age group 51–65 years, 26 (28.9%) from 66 to 80 years, and 7 (7.8%) above 80 years of age. The mean serum cholesterol in all patients was 4.16±1.1 mmol/l. In male patients the mean serum cholesterol was 4.26±1.2 mmol/l and that of female patients was 4.0±10.97 mmol/l. A total of 5 patients out of 90 had hypercholesterolemia and all of them were male. In the age group below 50...
In our study we have established that hypercholesterolemia is not a very common risk factor among ischaemic stroke patients in Hazara region. In this study only 5.6% of the male patients had hypercholesterolemia and none of the females had it. This is in variance with a number of other studies that have documented significantly high percentage of hypercholesterolemia in ischaemic stroke patients. Ischaemic strokes are likely to be associated with atherosclerosis. Tirschwell et al. investigated the association of total and high density lipoprotein cholesterol with the risk of stroke subtypes in a case control study. The results showed that highest total cholesterol quintile was associated with an increased risk of ischaemic stroke compared to the lowest quintile, with the strongest associations for atherosclerotic stroke and lacunar stroke subtypes.

One of the strengths of our study is that data was carefully collected by the investigator to avoid inter-observer bias. Laboratory investigations were conducted in the most professional manner with utmost care. However, due to smaller sample size the results may not be generalized to the population of patients of Hazara division suffering from stroke. Nonetheless the results could reflect the situation of those health clients that visit Ayub Teaching Hospital Abbottabad to seek medical care for stroke. A larger representative study might be more useful to determine the exact situation.

CONCLUSION

Hypercholesterolemia could not be established as a major risk factor for stroke in our setup through this study that allude to the fact that other risk factors might be contributing more to the incidence of cerebrovascular accident in our population.

AUTHOR’S CONTRIBUTION

ES: Designed the study, analysed data and drafted the manuscript. RA, MJ, AS, RJJ, MM: Facilitated data collection and analysis, helped in drafting and revising the manuscript.

REFERENCES


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