Assessment of Hypoalbuminemia in Cases of Ischemic Strokes

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ABSTRACT

Background: Hypoalbumenemia is one of the factors that predict numerous clinical effects like functional recovery, reoccurrences and some complications and utmost the death among patients with strokes. The main aim of the study is to assess the hypoalbumenemia in patients with ischemic strokes among local population

Methodology: This cross sectional study was conducted in medical departments of Mayo Hospital, Lahore. The study exclusion criteria includes all the patients with transient ischemic stroke, space occupying lesions in brain, comorbid cardiac problem like atrial fibrillation whereas all patients with ischemic stroke were included in the study.

Results: Total 125 patients were included with the mean age of 36±11.8 years with range 18-50. About 88(70.4%) of the patient were in age category of 35 to 44. Whereas 30(24%) belong to 18-35 and 7(5.6%) were above and equal 45 years of age. 75(60%) of the patients were male and 50(40%) were females.

Conclusion: We concluded high prevalence of hypoalbumenemia among Pakistani population. Moreover the age and hypertension is insignificantly associated with hypoalbumenemia.

Keywords: hypoalbumenemia, older age, hypertension, ischemic stroke, hospitalization

INTRODUCTION

Among hospitalized patients, the low serum albumin level (hypoalbumenemia) is much frequent specifically in older age patients. It is foresaid that hypoalbumenemia is one of the factors that predict numerous clinical outcomes like functional recovery, reoccurrences and medical complications and utmost the death among patients with strokes¹,¹². In literature it is reported up to 20% in stroke patients¹³,¹⁴,¹⁵. A patient with hypoalbumenemia during hospitalization has higher abortive obstacle risk, low functional outcome and death when reported with stroke¹⁴,¹⁵. Recent advancement in era has increased the interest about mortality and strokes due to hypoalbumenemia¹⁶,²¹. To the best of our knowledge all of these studies were performed and practiced in western countries, whereas variance in ethnicity and demographic factors may yield interesting outcomes. Also the work is limited in developing countries like Pakistan. That's why we conduct this study to assess the hypoalbumenemia in patients with ischemic strokes among Pakistani population. The findings of the study may assist in calculating the exact magnitude of the hypoalbumenemia, due to this we may develop a better management of the conditions related to morbidity and mortality.

MATERIAL AND METHODS

This cross sectional study was conducted in medical department of Mayo Hospital, Lahore during period of six months i.e., from January 2016 to June 2016. Patients with ischemic stroke were included in the study, while patients with transient ischemic stroke, space occupying lesion brain, comorbid cardiac disease i.e. history of atrial fibrillation were excluded from the study. Demographic and diagnostic details were collected through interview of the patient. Blood samples were obtained and sent to the hospital laboratory to assess albumen level. Reports were assessed and two groups were formed on the basis of albumin level i.e. hypoalbumenemia present or absent.

Statistical analysis: All collected data was stored & analyzed by using IMB SPSS v.21. Mean±SD were calculated for quantitative variables while frequency and percentage were calculated for categorical variables like sex of patient, hypoalbuminemia, and other variables. P-values≤0.05 was considered as significant.

RESULTS

Total 125 patients were included in the study with the mean age of 36±11.8 years and 88(70.4%) patient were in aged between 35 and 44. Whereas 30(24%) belong to 18-35 and 7(5.6%) were above and equal 45 years of age. 75(60%) of the patients were male and 50(40%) were females. Out of the total patients the summary of hypoalbumenemia (Fig. 1).
Whereas, the hypoalbumenia was observed more in male cases i.e. 68.18%. More on the demographic and diagnostic details can be seen in table 1.

60(48%) of the patients were with hypertension and hypoalbumenia and 40(32%) were no hypertension neither hypoalbumenia whereas, hypertension with no hypoalbumenia 12(9.6%) and 13(10.4) with no hypertension but with hypoalbumenia. The overall p value is 0.2898

### DISCUSSION

The study was conducted to assess the hypoalbumenia in patients with ischemic strokes among local population. We observed that the prevalence of hypoalbumenia in ischemic stroke patients is quite high among the local patients of ischemic strokes i.e., 35%. The finding of the studies conducted by Dziedzic et al\textsuperscript{22}, Vaheed A et al\textsuperscript{24}, Chen Y et al\textsuperscript{25} confirms our findings. Similar proportions of hypoalbumenia were observed in foresaid studies. As of all the patients were with ischemic strokes in our study, in literature it is published that it is the 3\textsuperscript{rd} major leading cause of mortality in United States of America (USA) with almost 7 lakh persons. Similar numbers were reported every year in Western countries also\textsuperscript{23}. The mortality due to strokes in hospitals was in range of 3% to 5\textsuperscript{th}\textsuperscript{26}. An indirect indication of systemic conditions like malnutrition is due to hypoalbumenia, low albumen level may lead to other chronic conditions that ruin the recovery ability of patient from stroke. Otherwise, hypoalbuneminemia at presentation of patient is an indicative role of albumin as a negative acute phase reactant whose quantity declines during acute inflammatory phase\textsuperscript{27}. We observed in our findings that the demographic and diagnostic factors might also have impact on the condition like hypoalbumenia and its frequency, which is highly related to the ill health and leads to in extreme conditions like death.

We also report that the relation of age and hypertension with hypoalbumenia is insignificant. This means it can appear to any age and condition to a patient with ischemic strokes. Moreover this study will have an important impact in management of ischemic stroke patients with hypoalbumenia.

### CONCLUSIONS

We may conclude a high prevalence of hypoalbumenia among Pakistani population. Moreover the age and hypertension is insignificantly associated with hypoalbumenia.

### REFERENCES


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