



SIGNIFICANCE OF MICROALBUMINURIA AS AN INDICATOR OF SEVERITY AND PROGNOSIS IN PATIENTS OF ACUTE ISCHEMIC CEREBROVASCULAR STROKE AT NEW CIVIL HOSPITAL, SURAT

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ABSTRACT

Background: Objective of this study was to find correlation between microalbuminuria and stroke severity based on NIH stroke scale and Modified Rankin Scale.

Methods: The present study comprises 50 patients, with history and clinical features suggestive of acute ischemic stroke admitted in New Civil Hospital, Surat during 5th December to 5th September 2017. The severity of stroke was assessed using the National Institute of Health Stroke Scale (NIHSS) on admission. The Modified Rankin Scale was used to assess the outcome. Data collected was analyzed using Chi-square test.

Results: The patients with recent ischemic stroke had an incidence of 74% in the study which is statistically very significant. Presence of microalbuminuria was associated with loss of consciousness (p value= 0.025). Patients with microalbuminuria had higher NIHSS score on admission; p-value <0.05 (highly significant), and thus correlating with increased severity and poor prognosis. Patients with microalbuminuria had higher MRS score; p-value <0.05 (highly significant), and thus correlating with poor prognosis. **Conclusions:** Our results indicate that presence of microalbuminuria is associated with an increased severity and poorer short term prognosis. Thus, they may act as indicators of severity and short term prognosis in patients with acute ischemic cerebrovascular stroke.

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INTRODUCTION

“Cerebrovascular Disease” or “Stroke” is one of the leading causes of mortality and morbidity in adults’ worldwide, posing serious medical, socio-economic and rehabilitation problems. Hence, there is growing interest in unifying mechanisms in ischemic stroke pathogenesis. Overtime, numerous risk factors have been found to be associated with increased occurrence of stroke. But, only one-half of the cerebrovascular disease risk could be explained by conventional risk factors. The realization that atherosclerosis is an inflammatory disease³ has led to a search for new stroke risk factors and treatment. One more addition to the growing list is ‘Microalbuminuria’.

Micro-albuminuria is defined as an increase in urinary albumin excretion ranging from 30 to 300 mg per 24 hours or 30 to 300 ug/mg of creatinine on spot urine sample. It reflects glomerular component of the systemic capillary leak which is fundamental to the pathogenesis of any acute stress condition. Microalbuminuria has been associated with many disease entities like diabetic nephropathy, hypertension with left ventricular hypertrophy and renal insufficiency, etc.

Microalbuminuria has been associated with clinical risk factors for stroke like diabetes, hypertension, aging, history of myocardial infarction, obesity, smoking and left ventricular hypertrophy.

But, there was little information regarding microalbuminuria as an independent risk factor for stroke or as a predictor of stroke outcome.

Aims & Objectives

The aim of this study is to observe 50 cases of acute ischemic cerebrovascular stroke and to detect the presence of microalbuminuria in each of them, following aims and objectives were kept in mind:

- To study the presence of microalbuminuria in acute ischemic stroke patients.
- To correlate the degree of microalbuminuria with the severity of stroke.
- To evaluate the prognostic significance of microalbuminuria in these recent ischemic stroke patients in accordance to NIHSS and Modified rankin scale

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- To determine the significance of microalbuminuria in relation to various parameters in the study population.

MATERIALS AND METHODS

The present study comprises 50 patients, with history and clinical features suggestive of acute ischemic stroke, admitted in New Civil Hospital.

Inclusion criteria

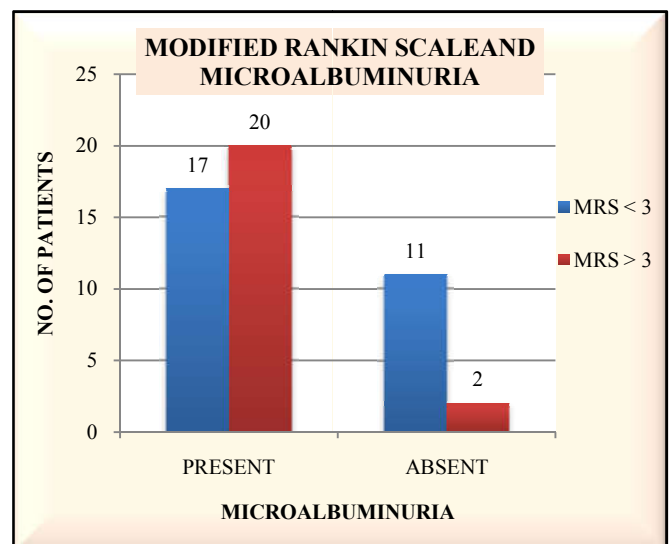
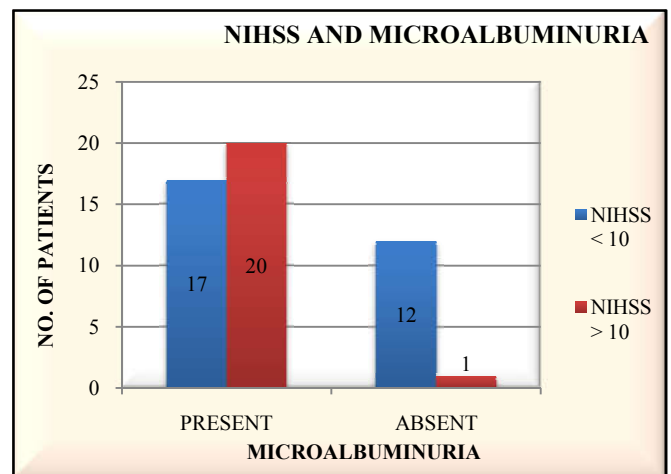
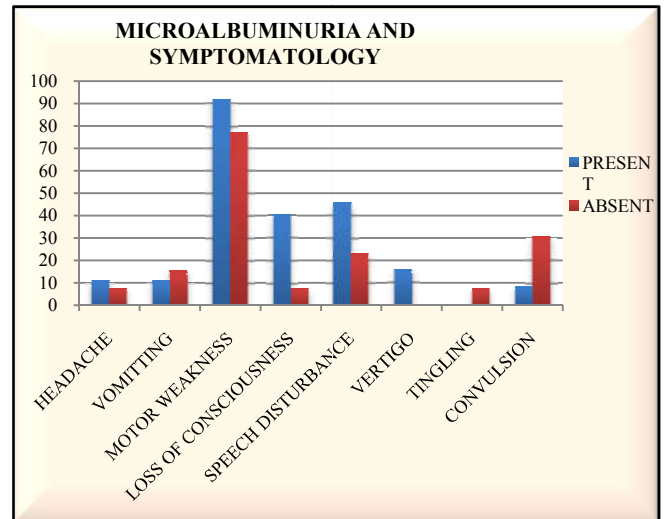
- Patients of any age and both sexes with first time ischemic stroke within 72 hours of onset of symptoms, the diagnosis of stroke being established by WHO definition of stroke.
- Ischemic lesion confirmed by CT Scan brain/MRI brain

Exclusion criteria

- Patients with hemorrhagic stroke, SAH or cerebral venous thrombosis. Patients with diabetes, Nephropathy and abnormal urinalysis. Systemic infection including bacterial meningitis. Neoplastic disease, Recent history of surgery or severe trauma.
- Spot urine samples to measure the urinary albumin-to-creatinine ratio (ACR). Clinical diagnosis was made and The National Institute of Health Stroke Scale score for all the patients at admission were calculated. The severity of stroke was assessed using NIHSS on admission. The Modified Rankin Scale was used to assess the outcome.

RESULTS

- In the present study, the mean age was 55.28 ± 12.67 years. 52 % of the patients were males and 48% were females.
- Most of patients (88 %) presented with motor weakness, followed by speech disturbance at 40 %, 32 % patients had loss of consciousness, Our study found statistically significant correlation between diminished consciousness between patients with and without microalbuminuria(MA)
- 20 patients with NIHSS score more than or equal to 10 had MA, while only 1 patients did not have MA. The presence of MA is associated with higher NIHSS score, representing a more severe infarct, and a poor prognosis as compared to absence of MA.
- In our study, 20 patients with MRS score more than 3 had MA, while only 2 patients did not have MA. The presence of MA is associated with higher MRS score, representing a poor prognosis as compared to absence of MA.
- The study did not reveal any difference in gender distribution between patients with or without MA.
- Our study found correlation between age and presence of MA but it didn't reach significant levels.



CONCLUSIONS AND LIMITATION

- The average age of the patients was 55.28 years. 52 % of the patients were males and 48% were females. The male to female ratio was 1.1:1.
- The most common presenting complaint was motor weakness, followed by speech disturbance.
- Presence of microalbuminuria was associated with loss of consciousness, thus correlating with severity of stroke.

- Patients with microalbuminuria had higher NIHSS score on admission; p-value <0.05 (highly significant), and thus correlating with increased severity and poor prognosis.
- Patients with microalbuminuria had higher MRS score; p-value <0.05 (highly significant), and thus correlating with poor prognosis.
- The major limitations were of the sample size and the long term follow up for the evaluation of the long term prognosis.

Reference

1. Beamer NB, Coull BM, Clark WM, Wynn M. Microalbuminuria in ischemic stroke, June 1999; 56(6): 699-702.
2. Wojeiech Turaj *et al.* The prognostic significance of microalbuminuria in non-diabetic acute stroke patients. *Med Sci Monit*, 2001; 7(5): 989-994.
3. Geert Sulter; Christel Steen; Jacques De Keyser. Use of the Barthel Index and Modified Rankin Scale in Acute Stroke Trials. *Stroke*, 1999; 30: 1538-1541.

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