

A Study of Short-Term Outcome of Ischemic Cerebro Vascular Accident Patients with Special Reference to Serum Uric Acid at Presentation

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Abstract: Background: Ischemic CVA is the most common life threatening neurological disease. Assessment of prognosis of ischemic CVA patient with respect of uric acid level as a risk factor to prevent mortality & morbidity have great impact on public health. Aim of the study: Our objective is to find out the effect of Serum Uric acid level on short term outcome of ischemic CVA patient. Materials & Methods: we did retrospective study in general medicine department of SSKM hospital; Kolkata on 2011-2012. Our study included 100 patients of ischemic CVA. We did a detailed laboratory investigation including serum uric acid level, detailed clinical examination. We collected Data according to hospital regulation after approval by hospital authorities & analyzed data with help of statistical method by using software. Discussion: in our study we found hyperurecemia in 17 male patients & 23 female, hyperurecemia in 40% of our stroke patients. We found Ischemic CVA patient with hyperurecemia at admission prognostically bad than patient with normal uric acid level. Results: In our study serum uric acid levels correlate with severity of ischemic CVA. We found statistically significant correlation between serum uric acid & severity of ischemic CVA. Conclusion: hyperurecemia is found to be associated with less chance of good outcome of ischemic CVA patients.

Keywords: Ischemic, investigation, uric acid

1. Introduction

CVA is the third most common cause of death worldwide. More than 50% of Neurological disorders in a general Hospital are of CVA. Prevalence of Ischemic CVA is more than Halmorrnogenic CVA. There are multiple risk for Ischemic CVA. There are some Innate risk foetors like age; male sex, family history of stroke & reaces Modifiable risk factor including-Hypertension, Dysdipidemia, smoking, coronary artery disease, Carotids & supraclavicular bruit, Sleep Apnopa; Excessive Salt Intake, Deficiency of Fruits & anti oxidant in food items, use of Oral Contraceptive. Uric acid is the end product of purine Metabolism. In our study, found that increased Uric acid level at presentation is a prognostically bad.

2. Material and Method

The present study is a retrospective observational, Epidemiological study conducted over period of one year (first January 2011 to thirty first December 2012) at SSKM Hospital & IPGME & R; Kolkata, West Bengal, India. We obtained ethical clearance before data collection. Patients of Ischemic CVA presenting within 72 hours of onset were selected for the study. We excluded Patients of below 40 years & patients suffering from other comorbid conditions which itself may be the determining factor for outcome of patients for example acute myocardial infraction; hepatic encephalopathy, renal failure. We included 100 patients of Ischemic CVA of various severity [Severity is assessed with Scandinavian Stroke scale (16)] both on admission and on discharge. We evaluated all patients clinically, did detailed laboratory investigation including serum uric acid level.

3. Discussion

After coronary Heart disease (CAD) & all Cancer, Stroke is third most common cause of death worldwide. Three quarter of the disease occur in developing countries (17). India will face an enormous socio- economic burden to rehabilitate stroke survivors because of increase longevity. More and more population is now surviving through vulnerable period i.e. age group 55 years to 65 years for the occurrence of stroke (19).

There is a potential pathogenic mechanism to explain how uric acid may have an injurious role in stroke. Recent evidence suggests that acute Ischemic stroke results in generations of local oxidant that augment local injury and increase infract size (32). Though Uric acid is considered anti oxidant (14, 15) studies showing deleterious clinical outcome. For these observations, one explanation may be Uric acid, being an aqueous anti oxidant can be a prooxidant under certain circumstances, particularly if other anti oxidant such as ascorbate is low. Thus the fall in ascorbate (Vit- C) level with acute stroke could predispose the serum Uric acid to take on pro oxidant properties. Consistent with this Hypothesis is the observation that in acute Ischemic CVA, those with high Uric acid & low ascorbate levels have the worst outcome (35). We used Scandinavain stroke scale (SSS) to assess neurological deficit. The stroke severity was measured on admission & discharge. In our study Age selected from 45 yrs to 95 yrs & mean ... age 64.16 yrs. Among them 54% female & 46% male. During history taking, Examination & doing proper investigation different co- morbid condition revealed. Rate of different co morbid contion was IHD- 20%; Hyper tension – 49% ; previous

H/O stroke – 15%; Diabetes mellitus- 13%; atrial fibrillation- 5% & Smoking-21%. During hospital admission total number of death was 16(09 female & 07 male). In patients having good outcome [SS score>30], Cases with Hyperurecemia have a correlation. Coefficient- 0.0878; whereas patient with normal value have a correlation coefficient 0.2714. considering numerical value, It is clear from the above calculation that patients with hyperurecemia have a less chance to have good outcome.

4. Results

Our present study consists of 100 Ischemic CVA patients, Of which 54 were female & 46 were male (Male: Female ratio -0.85:1). On analysis of comorbid conditions as well as risk factor we found 20 patients were having IHD, 49 patients were suffering from hypertension; 15 patients had previous history of stroke, 13 patients had DM, 5 patients had arterial fibrillation & 21 patients were smoker. With the analysis of CT finding we got 53 cases with multiple stroke. Among the single lesions, majority are in MCA territory; only one being ACA territory. In our study we found hyperurecemia in 17 male patients and 23 female patients. So we found hyperurecemia in 40% of stroke patients which is clearly more than expected generalized Hospitalized case (25%). We found relatively good outcome (SS Score>30) in 32 male and 36 female patients out of total 100 patients. So that 68% patients are having good outcome. We found 16% Hospital mortality in our study- among the male- female ratio was 7:9. When correlation analysis done we found that patients with Hyperurecemia have less chance to have good outcome.

5. Conclusion

The study shows patient of Ischemic CVA with hyperurecemia is found to be associated with less chance of good outcome.

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I expend from my personal account.

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K: Potassium
 ML: Multiple lesion
 Na: Sodium
 P/H/O Stroke: Past history of stroke
 RHD: Rheumatic heart disease
 RTI: Respiratory tract infection
 SEP: Septicaemia
 SL: Single lesion
 SSS: Scandinavian Stroke Scale
 UA: Uric acid
 U: Urea
 V.V: Varicose vein

Table showing the Age and Sex of the patients

Total No of Patients	Age(Years)		Sex		
	Range	Mean	Male	Female	M:F
100	40-95	64.16	46(46%)	54(54%)	0.85

Abbreviations

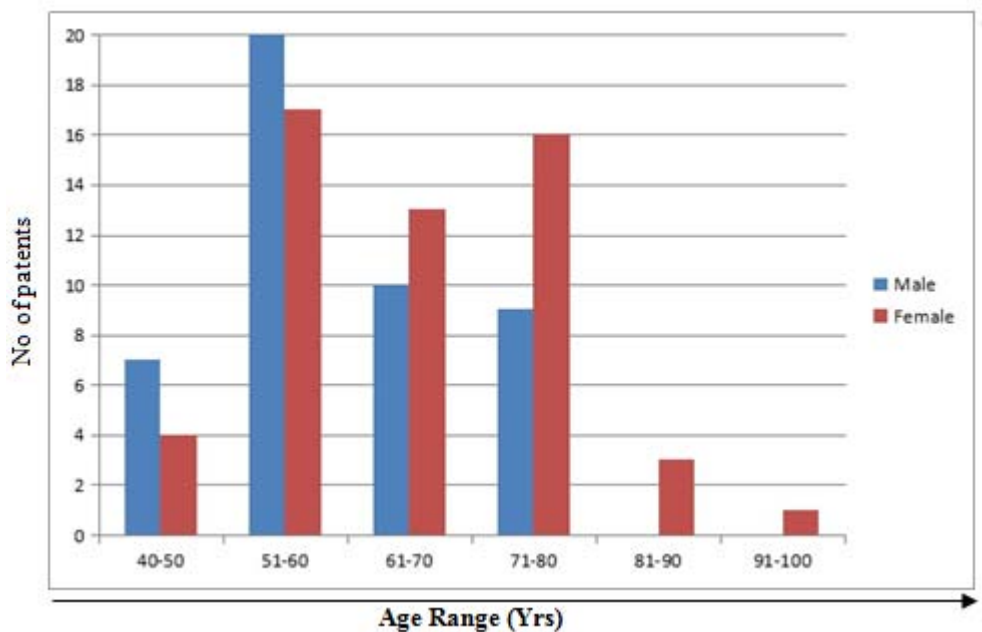
A. Pn: Aspiration pneumonia
 ADM: Admission
 AF: Atrial fibrillation
 CR: Creatinine
 COPD: Chronic obstructive pulmonary disease
 CHD: Coronary heart disease
 D: Discharge
 FBS: Fasting blood sugar
 HTN: Hypertension
 HT: Hypothyroid
 IHD: Ischaemic heart disease

Table showing relevant Co-morbid condition and distribution of patients

Total No	IHD	Hypertension	Previous H/O of Stroke	Diabetes Mellitus	Atrial Fibrillation	Smoking
100	20	49	15	13	5	21

Table showing distribution of male and female patients and SS SCORE (on discharge)

SL NO	SS SCORE (ON DISCHARGE)	Male	Female
1	0-15	2	2
2	16-30	5	7
3	31-45	21	31
4	>45	11	5
5	Death	7	9



Bar chart showing age and sex distribution of patients