CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.2654836

Available online at: http://www.iajps.com *Research Article*

SERUM URIC ACID IN PATIENTS WITH ACUTE ISCHEMIC STROKE

[1] Dr Muhammad Aslam Rind, [1] Dr. Maria Nazir, [2] Dr Muhammad Saleem Rind

[1]Liaquat University of Medical and Health Sciences – LUMHS Jamshoro

[2]Peoples University of Medical and Health Sciences for Women (PUMHS) Nawabshah

Article Received: February 2019 **Accepted:** March 2019 **Published:** April 2019

Abstract:

OBJECTIVE: *To determine serum uric acid in patients with acute ischemic stroke.*

PATIENTS AND METHODS: *The patients of 35-70 year of age, either gender who were admitted in our hospital with first-ever-in life time acute ischemic stroke with CT scan evidence of infarction within 24 hrs of onset of stroke. All subjects gave informed consent while the blood samples were taken within 24 hrs of onset of stroke for baseline investigations and serum uric acid level and sent for biochemical analysis while the frequency / percentages (%) and means ±SD computed for study variables.*

RESULTS: *During six months study period total fifty patients with acute ischemic stroke were explored and studied. The frequency for male and female population was 32 (64%) and 18 (36%) with mean ± SD for age of male and female individuals was 60.83±8.62 and 58.84±7.83 respectively. Gender male 35 (70%), female 15 (30%), smoking 30 (60%), alcohol 13 (26%), residence urban 32 (64%) and rural 18 (36%) where as the hyperuricemia was identified in 32 (64%).*

CONCLUSION: *The elevated serum uric acid level is detected in patients with acute ischaemic stroke.*

KEYWORDS: *Uric acid, Ischemic stroke, cerebrovascular accident.*

Corresponding author:

*** Dr Muhammad Aslam Rind,**

Email: zulfikar229@hotmail.com

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Please cite this article in press Muhammad Aslam Rind et al., ***Serum Uric Acid in Patients with Acute Ischemic Stroke.,*** *Indo Am. J. P. Sci, 2019; 06(04).*

INTRODUCTION:

Among all the neurological illnesses of grown-up life, the cerebrovascular ones plainly rank the first in recurrence and significance [1]. Every one of the doctors have a task to carry out in the avoidance of stroke by empowering the decrease in hazard factors [2]. Stroke additionally involves a high financial weight because of expanded bleakness and mortality. Early recognizable proof of people in danger could be of assistance in essential counteractive action techniques [3].

Uric acid is the most copious watery cancer prevention agent in people, and contributes as much as 66% of all free radical searching limit in plasma. It is especially viable in extinguishing hydroxyl, superoxide and peroxynitrite radicals, and may serve a defensive physiological job by forestalling lipid peroxidation [4]. In an assortment of organs and vascular beds, neighborhood UA focuses increment amid intense oxidative pressure and ischaemia, and the expanded fixations may be a compensatory instrument that gives assurance against expanded free extreme action [5].

The job of serum uric acid (SUA) levels as a free hazard factor for vascular malady has been addressed for a considerable length of time [6]. Proof from epidemiological investigations proposes that the raised SUA levels may anticipate an expanded hazard for cerebrovascular (CV) occasions including stroke. Also, remedial modalities with a SUA bringing potential have been appeared at lessen CV malady dismalness and mortality [7].

Subjects with diabetes have a twofold to four overlap more serious danger of all indications of atherosclerotic vascular illness including stroke. The expanded danger of stroke is just somewhat clarified by the unfriendly impacts of diabetes on great hazard factors or hazard factors bunching with hyperinsulinemia [8]. SUA has been as of late connected with insulin opposition. The information has set up an autonomous relationship in subjects, paying little heed to frustrating elements, for example, sex, menopausal status, and diuretic use, nearness of CV infection or race. In such manner SUA levels could be utilized as a simple to gauge serum marker in choosing and fittingly treating subjects of intense ischemic stroke.

PATIENTS AND METHODS:

The patients of 35-multi-year of age, either sex who were conceded in our emergency clinic with first-ever-in life time intense ischemic stroke with CT filter proof of localized necrosis inside 24 hrs of beginning of stroke while the avoidance criteria were the patients with past history of TIA/CVA, on thiazide diuretics, known instances of gout or show clinical confirmations of gout and ceaseless renal disappointment, the patients whose CT check show discharge or other space possessing sores other than infarct, known haemotological variations from the norm like leukemia or other myeloproliferative scatters. All subjects gave educated assent while the blood tests were taken inside 24 hrs of beginning of stroke for gauge examinations and serum uric acid dimension and sent for biochemical investigation. The information was gathered on predesigned proforma while dissected in SPSS and the frequencies, rates and mean ± SD was determined.

RESULTS:

During six months study period total fifty patients with acute ischemic stroke were explored and studied. The frequency for male and female population was 35 (70%) and 15 (30%) with mean ± SD for age of male and female individuals was 60.83±8.62 and 58.84±7.83 respectively. The demographical and clinical profile of study population is presented in Table 1.

TABLE 1: THE DEMOGRAPHICAL AND CLINICAL PROFILE OF STUDY POPULATION

Parameter	Frequency (N=50)	Percentage (%)
AGE (yrs)		
35-39	08	16
40-49	09	18
50-59	20	40
60-70	13	26
GENDER		
Male	35	70
Female	15	30
SMOKING		
Yes	30	60
No	20	40
ALCOHOL		
Yes	13	26
No	37	74
RESIDENCE		
Urban	32	64
Rural	18	36
HYPERURICEMIA		
Yes	32	64
No	18	36

DISCUSSION:

SUA is one of the major fluid cell reinforcement in people and comprises as much as 2/third of plasma free radical rummaging capacity [9]. It is in this way judicious to expect that SUA should have a defensive job in stroke. A clarification to this originates from study which demonstrated that SUA can function as star oxidant in specific situations, especially if the dimensions of different cell reinforcements like ascorbic corrosive are low [10]. Different examinations have appeared uric acid can result in endothelial brokenness which can prompt vascular malady [11, 12]. A relationship among SUA and provocative markers has additionally been found.

As indicated by previous investigation SUA acts like cell reinforcement in the beginning times of atherosclerotic procedure, being a standout amongst the most dominant determinants of plasma cancer prevention agent limit [13]. Afterward, in the advancement of atherosclerotic procedure when SUA achieves 4-6mg/dl it progresses toward becoming prooxidant. The cell reinforcement Prooxidant urate transport depends on its encompassing condition. Cerebral Ischemia starts a perplexing course of metabolic occasions, creating nitric oxide and free oxygen radicals. Those free radicals and responsive oxygen species (ROS) intercede an extraordinary piece of wounds showing up after a fleeting ischemic assault or amid changeless ischemia, adjusting macromolecules particularly DNA, starting apoptosis and necrosis [14].

CONCLUSION:

The relationship between raised SUA and ischemic stroke should be considered particularly while treating old patients, diabetics and the populace with coronary vein malady and it very well may be considered as one of the hazard factors for intense ischemic stroke.

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