

Role Of Uric Acid As A Prognostic Tool In Infections Of The Central Nervous System

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Date of Submission: 09-11-2024

Date of Acceptance: 19-11-2024

I. Introduction:

Infections of the central nervous system (CNS), such as meningitis and encephalitis, are associated with high morbidity and mortality. The role of reactive oxygen species (ROS) and the inflammatory response in CNS infections is well documented. Uric acid, a natural scavenger of peroxynitrite, may play a role in reducing brain inflammation. This study aims to explore the relationship between serum uric acid levels and CNS infections to evaluate its potential as a prognostic tool.

II. Materials And Methods:

This prospective observational study was conducted at AJ institute of medical sciences. The study included 53 patients diagnosed with CNS infections, as defined by Harrison's Principles of Internal Medicine. Informed consent were obtained. Serum uric acid levels were measured before and after treatment.

Inclusion Criteria:

- Patients aged >18 years diagnosed with CNS infections
- Informed consent provided

Exclusion Criteria:

- Patients on drugs affecting uric acid levels (e.g., aspirin, diuretics)
- Patients with malignancies, renal failure, diabetes mellitus, autoimmune disorders, gout, or HIV

III. Results:

The mean age of the study subjects was 41 ± 17 years, with a nearly equal distribution of male and female participants. Serum uric acid levels were significantly lower in patients with CNS infections, particularly in meningoencephalitis, and increased upon successful treatment. Paired samples t-tests revealed a significant rise in uric acid levels post-treatment, correlating with clinical improvement.

IV. Conclusion:

Serum uric acid is a potential biomarker for prognosis in CNS infections, with lower levels indicating severe blood-brain barrier damage. The rise in uric acid post-treatment suggests effective therapy, making it a useful tool in managing CNS infections. Further research is required to confirm these findings.