THESIS PROTOCOL

TOPIC

SERUM ALBUMIN LEVELS AS A PREDICTOR OF ISCHEMIC STROKE OUTCOME.

INTRODUCTION

A stroke, or cerebrovascular accident, is defined by an abrupt onset of a neurologic deficit that is attributable to a focal vascular cause. Thus, the definition of stroke is clinical, and laboratory studies including brain imaging are used to support the diagnosis. Major risk factors identified in India are Systemic Hypertension,Diabetes,Alcohol,Tobacco and hypercholesterolemia. As our knowledge about the various risk factors for stroke increases day-by-day, more and more therapeutic interventions for prevention of stroke in various high risk groups have come into practice. Recent studies have shown prognostic role of serum albumin level in cases of Acute Ischemic Stroke [AIS], a higher level of which correlate with a better prognosis as shown in some western studies.However these finding have not been validated sufficiently in the Indian population. Therapeutic interventions in murine models of acute ischemic strokes have shown a better prognosis with albumin infusions alone, as also when given in combination with tissue-plasminogen activator (tPA) as it decreased tPA induced vascular and Blood-Brain- barrier damage. Thus there is a rising interest in the correlation of albumin levels with

clinical severity of acute stroke as there inlies an opportunity for medical intervention.

JUSTIFICATION FOR THE STUDY:

Cerebrovascular diseases include some of the most common and devastating disorders:Ischemic stroke and hemorrhagic stroke.Stroke is the second leading cause of death worldwide.So if there is a suitable predictor for ischemic stroke outcome it will enable us to monitor and prognosticate the patients closely.Later further studies may entail therapeutic intervention-albumin infusion.

AIM

To determine the prognostic value of serum albumin levels in Acute Ischemic Stroke by correlating its levels with clinical outcome.

STUDY DESIGN

Hospital based prospective study

SAMPLE SIZE: 50

INCLUSION CRITERIA:

All patients of age group more than 18 years with clinical and radiological evidence of acute ischemic stroke

EXCLUSION CRITERIA

1) Cerebral hemorrhage of any etiology
2) Liver disease (Alcohol intake >20 units/week for males,>14 units/week for females)
3) Cardiac failure
4) Nephrotic syndrome/diabetic nephropathy(urine albumin >2+)
5) Protein losing enteropathies
6) Malignancy
7) Conditions mimicking stroke
   a) Metabolic
      -severehyponatremia
      -hypoglycemia
      -hepatic encephalopathy
      -hyperglycemic hyperosmolar Non ketotic state
   b) Psychiatric disorders
      -conversion disorder
      -malingering
      -factitious disorder
   c) Infectious conditions
      -viral encephalitis
      -Bacterial meningitis
      -Brain abscess
   d) Inner ear
      - labyrinthitis
      -BPPV
      -vestibular neuronitis
   e) cardiovascular
      -syncope
      -hypertensive encephalopathy

f) Neurological conditions

-seizure with Todd’s paralysis

-brain tumor

-demyelinating disorders

-myasthenia gravis

-bell’s palsy

METHODOLOGY

The study is based on prospective collection of data in Ischemic stroke patients who fulfill the inclusion criteria stated above and admitted in medicineand neurology ward in a tertiary care centre(PSGIMSR) where systematic computer coding for registry is used.Diagnosis of ischemic stroke is based on clinical observation and radiological imaging.

Blood samples for assessment of albumin will be collected at admission within 36 hours after stroke onset.Stroke severity at presentation will be determined by NIHSS score.Functional outcome will be measured 1 week post admission and after 3 months during followup using modified rankin scale.

Favourable score mRS:0-3

Unfavourable score mRS:4-6

FLOW CHART

Proposal to ethics committee and approval from ethics committee

All patients diagnosed with acute ischemic stroke

Serum albumin levels measured

Stroke severity determined using NIHSS score

Functional outcome measured by modified rankin scale after 3 months

Descriptive and Statistical interpretation of clinical outcome in relation to serum albumin

Final report and submission

REFERENCES

1)**Prognostic Significance Of Serum Albumin Levels In Acute Ischemic Stroke**
GauravKasundra*, IshaSood**
*DM Neurology Resident, Department of Neurology, ** Senior Resident, Department of Medicine, Dr. S. N. Medical College, Jodhpur

2) Serum albumin levels in ischemic stroke and its subtypes: Correlation with clinical outcome.
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3)Dziedzic T, Slowik A, Szczudlik A. Serum albumin level as a predictor of ischemic stroke outcome. Stroke. 2004; 35: 156–158