

Study of Renal Function Test in Patients of Acute Haemorrhagic Stroke

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I. INTRODUCTION

Stroke is a major cause of mortality and morbidity world wide . It is the 2nd commonest cause of death and one of the most important cause of disability (strong 2007).

Acute haemorrhagic stroke is the largest killer apart from Ischaemic stroke.Cases of haemorrhagic stroke frequently presents as a sudden loss of consciousness, vomiting , convulsion and Hemiplegia. Hypertension has been observed as one of the commonest association of stroke. But in many cases BP may be low or normal Vascular malformation, aneurysms and various types of angiopathies may be associated with stroke mainly sub- arachnoid haemorrhage . Early stroke survivors has been followed and investigation showed raised serum creatinine concentration in them (Friedman et al).When followed for a period of 18 months it was observed that mortality was higher in patients who had higher serum creatinine concentration.

In a subsequent study known as Northern Manhattan study (NOMAS) which followed 3298 patients for 6.5 years for vascular outcomes .This study showed that renal failure patients with GFR between 15 to 59 mL/min are at high risk for stroke .Moreover , impaired kidney function has been associated with cerebral micro-bleeding. The incidence of mortality from stroke is also higher in kidney disease patients compared with the general population

The present study is aimed to assess the renal function in patients of acute haemorrhagic stroke

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AIMS AND OBJECTIVE

- 1.To study renal function test in patients with acute haemorrhagic stroke.
- 2.To find association of abnormal renal function with adverse outcome in patients with acute hemorrhagic stroke

II. MATERIAL AND METHODS

The present study was conducted at Agartala Govt Medical College and G B hospital ,Tripura.A total of 100 patients presenting with acute haemorrhagic stroke admitted to this hospital were included in this study after having taken informed consent.

SELECTION CRITERIA OF CASES

INCLUSION CRITERIA

Patients above 18 years of age presenting with clinical diagnosis of acute haemorrhagic stroke ,later confirmed by CT scan were included in the study.

EXCLUSION CRITERIA

Cases with following factors were excluded from study

- 1.Head injury
- 2.Primary SOL (space occupying lesion)
- 3.Metastasis
- 4.Bleeding disorder
5. Anticoagulation therapy

III. METHOD OF DATA COLLECTION

Patients details were recorded as regards :-

1. Age : patients were divided into three groups as follows

a. 18-40 years

b. 41-60 years

c. 61-80 years

2. Sex of the patient

3. History Diabetes , Hypertension ,smoking, alcohol , trauma , heart disease,past history of TIA /stroke , family history of diabetes, hypertension ,stroke were recorded.

4. Detail clinical examination for vital parameters and neurological deficit, Glasglow coma scale scoring were done for all patients as per proforma

5. Following investigations were done

a. CT scan brain

b. Complete Haemogram, BT,CT

c. Urine Examination

d. Blood sugar (fasting/PP/HbA1c)

e. Urea/Creatinine/electrolytes

f. Lipid profile / LFT

e. ECG

f. Other investigations like MRI, Ecocardiography are done wherever needed.

6. Renal function was assessed using the MDRD (Modification of diet for renal diseases) formula that estimates eGFR (glomerular filtration rate) . $GFR(ml/min/1.73^A)=$

$186*Scr(mg/dl)*age * 0.742(if\ woman)*1.21$ for black American

Patients were divided into two groups on the basis of eGFR

1. Group A: Comprised patients with $eGFR > 60ml/min/1.73m$ of body surface area (BSA)

2. Group B: Comprised patients with $eGFR < 60 ml/min/1.73m$ of BSA.

All patients were treated conservatively with anti-cerebral edema measures Anti hypertensive drugs ,Anti diabetic medication, Antibiotics, care of bowel, Bladder, Back, physiotherapy etc. Outcome of stroke patients were assessed in terms of mortality within 30 days .At the end of the study the data were compiled , tabulated and analysed using appropriate statistical technique.

IV. RESULTS

Present study showed that out of 100 patients with acute haemorrhagic stroke 95 patients had intracerebral haemorrhage (ICH) and 5 had subarachnoid haemorrhage (SAH) .Most common clinical presentation were loss of consciousness seen in 85% of cases ,Hemiparesis in 84%of cases ,Headache 75% cases and vomiting in 65% cases.In the present study all cases of acute Haemorrhagic stroke were divided into 2 groups based on eGFR level at the time of presentation. Group A had $eGFR > 60ml/min/1.73m$ BSA .Group A accounted 40% of total cases while Group B consisted of 60% cases. Similarly all cases of acute Haemorrhagic stroke were classified on the basis of Blood urea and serum creatinine level at the time presentation.Out of 100 cases of acute haemorrhagic stroke 75% cases had blood urea $> 40 mg/dl$ and 65% had serum creatinine $> 1mg/dl$.Like previous studies stroke was found to be more prevalent in older people. Present study showed 70% cases were of > 60 years of age .In this study higher incidence of stroke was found in males (65%) as compared to females (35%).However ,the incidence of renal dysfunction as evidenced by $eGFR < 60ml/min/1.73m$ BSA was similar in both sexes.In the present study,among risk factors Hypertension was seen in 60% of patients belonging to Group A and 70% of patients belonging to Group B.Association with smoking , alcohol and dyslipidemias was almost similar in both groups and showed no significant difference. In the present study final outcomes was all cause mortality within 30 days of presentation. A total of 30 deaths occurred out 100 cases of acute haemorrhagic stroke out of which 10deaths occurred in Group A patients and 20 deaths occurred in group B patients. Outcome was also compared in relation of blood urea and serum creatinine concentration at the time of presentation. 70% of deaths occurred in those with blood urea level $> 40mg/dl$ and 65% deaths occurred in the those elevated serum creatinine concentration $> 1mg/dl$. It was concluded that patients of acute haemorrhagic stroke with renal dysfunction were more likely to die within 30 days of presentation. This association was significant ($P < 0.01$).

V. CONCLUSION

From the above observation it was concluded that Renal dysfunction as evidenced by (a) $eGFR < 60ml/min/1.73m$ BSA (b) Blood urea $> 40 mg /dl$ (c) Serum creatinine $> 1mg/dl$ are not only an important risk factor for acute haemorrhagic stroke but are also an independent predictor of mortality within 30 days of presentation.

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