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"Clinical profile of stroke in diabetics and non-diabetic and it's outcome -A cross sectional study"

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ABSTRACT
Background:.Stroke in diabetes is 1.5-3 times more likely as compared to non-diabetics.[3]Diabetes mellitus is a risk factor for both an excess incidence and mortality of Stroke.[4]**AIM:**To study and determine the distinctive clinical profile of stroke in diabetics and non-diabetics and it's outcome
OBJECTIVES: To study and compare the clinical profile of stroke with respect to age, sex, stroke type, stroke severity, prevalence of risk factors in the diabetics and non-diabetics **Methodology**:The present cross-sectional study was carried out at the Medicine Department of Rohilkhand Medical College and Hospital in Bareilly, Uttar Pradesh. **Results:** Mean **NIHSS** of diabetic patients was 15.15 ± 6.66 and in non-diabetic patients mean **NIHSS** was 10.85 ± 6.33. There was significant difference in mean **NIHSS** of patients in diabetic and non-diabetic group.
Out of 20 patients in diabetic group 5(25%) were died, 5(25%) had good outcome, 3(15%) had moderate outcome and 7(35%) had poor out come and Out of 20 patients in non-diabetic group 3(15%) were died, 8(40%) had good outcome,7(35%) had moderate outcome and 2(10%) had poor outcome. There was significant difference in Outcome of patients in diabetic and non-diabetic group.
CONCLUSION This study shows a association in sugar value and the outcome of stroke. Higherelevated blood glucose level has increased mortality andhigh riskofpoorfunctionalrecovery.
Keywords:Stroke, Diabetics, Non -Diabeticcs

I. INTRODUCTION:

Stroke is defined as an abrupt onset of a neurological deficit that is attributable to a focal vascular cause.[1] Stroke is second most common cause of mortality and the third most common cause of disabilityworldwide[2]. The majority (about 85%) of stroke is ischaemic. The reminder result from primary haemorrhage either intracerebral or into the subarachnoid space.

Diabetes potentiates stroke by favouring thrombosis by increasing concentration in blood of prothrombotic factors like fibrinogen and von willebrand factor. It also increases platelet adhesiveness. Fibrinolytic capacity is decreased through increased concentrations of plasminogen activator inhibitor type 1.

Diabetes also favours atherogenesis because of various lipid abnormalities like hypertriglyceridemia, low HDL cholesterol and high triglyceride-enriched HDL. Glycosylation of lipoproteins and oxidation of lipoproteins leads to atheroma formation.

The relative risk of stroke in diabetics approximately doubled as compared to patients without diabetes. Clinical profile of stroke is different in diabetics compared in non- diabetics in many aspects.

Hyperglycemia itself is independent risk factorpredicting high morbidity and mortality irrespective of age,type and severity of stroke.[3]
The pattern of stroke in diabetes is different than non-diabetes. Diabetes increases risk of stroke in younger patients as well as women.[4]

II. MATERIALS AND METHODS:

PLACE OF STUDY: This study was conducted in patients attending OPD and IPD in Department of Medicine, Rohilkhand Medical College and Hospital, Bareilly Uttar Pradesh.
TYPE OF STUDY: A cross sectional study.
DURATION OF STUDY: The proposed study will be conducted from the 1st November 2020 to 31st October 2021.
SAMPLE SIZE: This study was conducted on 40 patients with stroke (out of which 20 patients were diabetic or found to have diabetes, and 20 were non-diabetic stroke patients). The sample size is derived by [5]

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Following formula
$n = 4xpx\ q\ /l^2$
n=Sample size
p=Estimated prevalence
q=100-P
l=acceptable absolute error i.e,10%
n=4x90x (100-90)/10x10=36 ~40

SUBJECTS OF STUDY: Patients who were be admitted with history of acute stroke and confirmed by thorough physical examination and radiological investigation to have stroke, and satisfied the inclusion and exclusion criteria were studied.

INCLUSION CRITERIA
All stroke patients with and without diabetes

EXCLUSION CRITERIA
1.Patients receiving diabetogenic drugs.
2.Patients presenting with recurrent stroke
3. Patients presenting with Transient ischemic attack, Hemorrhagic stroke
4.Patients having severe stroke who died before it could be established whether they had diabetes or not.

METHOD

A hospital based prospective observational study was conducted in Department of Medicine at Rohilkhand Medical College and hospital, Bareilly after obtaining clearance from Institutional ethics Committee (IEC) Patients who were admitted with history of acute stroke on the basis of physical examination and CT BRAIN, as per above criteria were included. After informed consent, a careful history was recorded, detailed general physical and systemic examinations was done. Patient was considered diabetic when the following criteria for diagnosis of Diabetes Mellitus satisfied or patient is known case of diabetes mellitus

Criteria for the Diagnosis of Diabetes Mellitus
- Symptoms of diabetes plus random blood glucose concentration
≥11.1 mmol/L (200 mg/dL) or
- Fasting plasma glucose ≥7.0 mmol/L (126 mg/dL) or
- Hemoglobin A1c ≥ 6.5%c or
- 2-h plasma glucose ≥11.1 mmol/L (200 mg/dL) during an oral glucose
tolerance test.

Specific investigations (FBS/PPBS/ HBA1C/ CT Scan and MRI) were done as and when indicated. Details of history, General physical examination and
Laboratory investigations reports were noted down from time to time.

Statistical Analysis:
- The data was coded and entered; its clearing and compiling was done on a Microsoft Excel Spreadsheet and then it was imported into Statistical Package for Social Sciences (SPSS) version 23.0 for statistical analysis.
- Data was analyzed by applying frequency, percentage, mean, standard deviation.
- Appropriate statistical tests was applied based on distribution and type of data
- The quantitative data, expressed in means and analysed by t-test and proportions through chi square test.

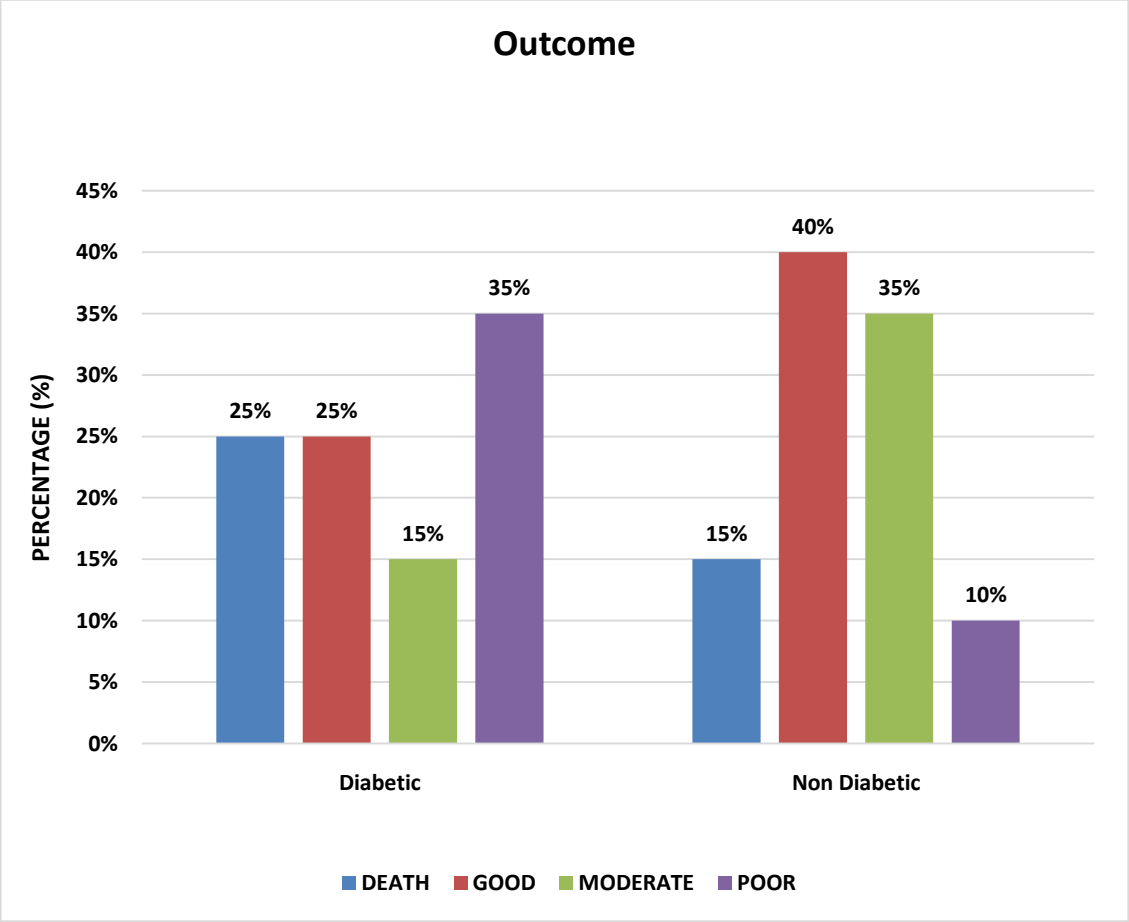
P-value of <0.05 was considered statistically significant

III. RESULT:

COMPARISON OF MEAN NIHSS IN DIABETIC AND NON DIABETIC PATIENTS.

NIHSS	Number	Mean	Std. Deviation	P-VALUE
Diabetic	20	15.15	6.66	**<0.05***
Non Diabetic	20	10.85	6.33	

	Diabetic		Non Diabetic		P Value
Outcome	**Diabetic**	**Diabetic**	**Non Diabetic**	**Non Diabetic**	
DEATH	5	25%	3	15%	>0.05
GOOD	5	25%	8	40%	
MODERATE	3	15%	7	35%	
POOR	7	35%	2	10%	
Total	20	100%	20	100%	



IV. DISCUSSION

- Mean **NIHSS** of diabetic patients was 15.15 ± 6.66 and in non-diabetic patients mean **NIHSS** was 10.85 ± 6.33. There was significant difference in mean **NIHSS** of patients in diabetic and non-diabetic group.
- Out of 20 patients in diabetic group 5(25%) were died, 5(25%) had good outcome, 3(15%) had moderate outcome and 7(35%) had poor out come and Out of 20 patients in non-diabetic group 3(15%) were died, 8(40%) had good outcome,7(35%) had moderate outcome and 2(10%) had poor outcome. There was significant difference in Outcome of patients in diabetic and non-diabetic group.

V. CONCLUSION:

- This study shows a association in sugar value and the outcome of stroke. Higher elevated blood glucose level has increased mortality and high risk of poor functional recovery.

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