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Clinical Outcome in Ischemic Stroke Patients with Hyperglycaemia

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Abstract: ***There is a linear correlation between admission day hyperglycemia and ischemic stroke in its severity, size and outcome. There is a positive correlation between admission day glucose level and the outcome in ischemic stroke. Admission day elevated glucose level was a significant predictor of mortality and poor functional outcome after acute stroke. Hence, restoration of normoglycemia as soon as possible should be encouraged. In the interim, we should fare well with adhering to good general stroke management, normalization of body temperature, fluid balance and hemodynamics or we may otherwise risk the favorable outcome even in the patients with normoglycemia.***

Keywords: ischemic stroke, hyperglycaemia

1. Introduction

- Stoke is one of the leading cause of death and long term disability in India and worldwide.
- Stroke after heart disease is the second most common cause of death among non - communicable diseases. [1]
- Diabetes mellitus by virtue of its association with microvascular and macro vascular diseases is an important risk factor in the genesis of stroke. [2]
- Most of the diabetic patients with stroke have raised glycosylated hemoglobin indicating that most of them have uncontrolled diabetes. Diabetics and stress hyperglycemic have severe strokes resulting in poor outcome. Stroke is Twice more common in diabetics than in non diabetics. [3]

2. Aims and Objectives

- To measure the random blood glucose level in the early phase of ischemic stroke (within 24 hours of onset) in both diabetics and in non diabetics and to evaluate the severity and prognosis in both diabetics and non diabetics in relation to hyperglycemia.

3. Methodology

- All patients who fulfill the inclusion criteria, admitted in the neurology department with ischemic stroke are included in the study.
- Patients attending the casualty with symptoms suggestive of stroke are screened using CT brain.
- Random blood sugar levels and HBA1C levels were done within 24 hours of onset of ischemic stroke in these patients.

4. Materials and Methods

This is a cross sectional study conducted on 50 acute ischemic stroke patients who were admitted in neurology department in a period of one year.

Inclusion criteria

- Patients above 40 years of age.
- Admitted within 24 hours of onset of symptoms.
- Should be the first cerebrovascular event for the patient.
- Blood sugar level should be recorded within 24 hours.

Exclusion criteria

Patients admitted after 24 hours of stroke.
Patients who received intravenous glucose before or during study.

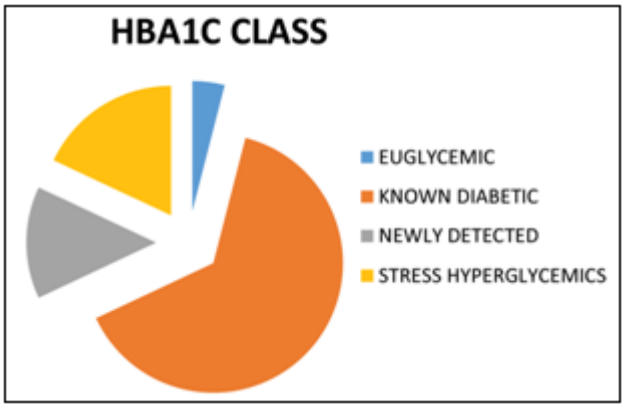
5. Results

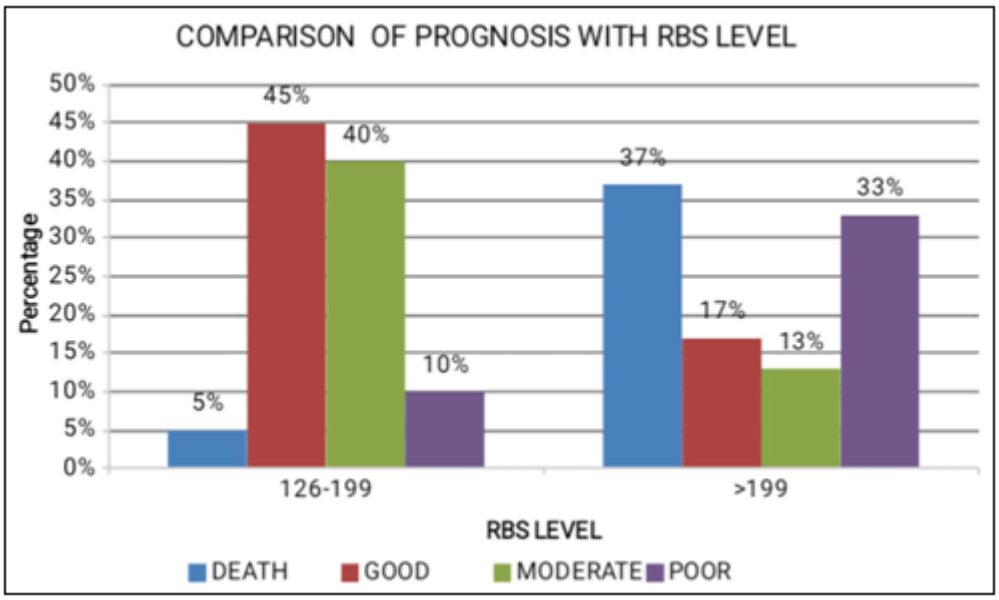
Sex	Frequency	Percent
Male	30	60
Female	20	40
Total	50	100

Age wise distribution

Age	Frequency	Percent
40 - 50 Years	9	18
51 - 60 Years	15	30
61 - 70 Years	14	28
71 - 80 Years	12	24
Total	50	100

	Frequency	Percent
Euglycemic	2	4
Known diabetic	32	64
Newly detected	7	14
Stress hyperglycaemics	9	18
Total	50	100





6. Summary

- In our study of fifty patients, majority of them belonged to male sex showing a male preponderance.
- As per age distribution, fifteen were between three age group of 51 to 60 years.
- Among the fifty patients in our study group, 30 patients had elevated admission day blood glucose level and 20 patients had normal blood glucose values. Diabetes was noticed in 32 patients and stress hyperglycaemia in 9 patients. Stress hyperglycaemia amounted to more than one third of the patients.
- Our study clearly shows a positive correlation (r = 0.71, p = 0.01) between admission day sugar value and the outcome of stroke. Higher admission day elevated blood glucose level has increased mortality and high risk of poor functional recovery.

7. Conclusion

There is a linear correlation between admission day hyperglycemia and ischemic stroke in its severity, size and outcome. There is a positive correlation between admission day glucose level and the outcome in ischemic stroke. Admission day elevated glucose level was a significant predictor of mortality and poor functional outcome after acute stroke. Hence, restoration of normoglycemia as soon as possible should be encouraged. In the interim, we should fare well with adhering to good general stroke management, normalization of body temperature, fluid balance and hemodynamics or we may otherwise risk the favorable outcome even in the patients with normoglycemia.

References

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