



Prognostic Value of Dysglycemia in Cerebral Hemorrhage in Patients with Metabolic Syndrome

Tarek A. El-Shazly Assistant professor of Internal Medicine Department, Faculty of Medicine, Mansoura University, Egypt



Background

Intracranial hemorrhage is a devastating disease with high rates of mortality and morbidity (Elliot and Smith, 2010). Each component of metabolic syndrome contributed to the increased risk of hemorrhagic stroke except for low HDL level and hyperglycemia, significant excess risk of stroke was found associated with diabetes but not with borderline glucose dysfunction (Iso H et al., 2004). Among all risk factors high blood pressure and hyperglycemia were most prevalent in community (Wang et al., 2004), the association between metabolic syndrome and stroke cannot be explained only by isolated hyperglycemia without the presence of other accompanying risk factors (Liu et al., 2007).

Aim of the Work

The aim of this study is to evaluate role of dysglycemia in cases of cerebral Hemorrhage in patients with metabolic syndrome.

Material & Methods

This study included 240 patients presented with hemorrhagic stroke, the patients were divided into two groups according to absence or presence of metabolic syndrome according to IDF criteria (2006), Group I included 77 hemorrhagic stroke patients with Met S criteria. Group II included 163 hemorrhagic stroke patients without Met S with inclusion criteria; cerebral stroke patients diagnosed clinically and confirmed by brain CT. Exclusion criteria; space occupying lesion in brain, infectious brain disease, and evidence of recent ischemic stroke. All patients were subjected to thorough clinical examination including full history, full general examination with special attention to blood pressure and thorough neurological examination. Also, patients done anthropometric measures including waist circumference, Hip circumference and waist hip ratio. Also, routine investigations including laboratory investigations, ECG, chest x ray and neuroimaging and also, severity assessment using GCS score and APACHE II score.

Effect of number of components of metabolic syndrome on mortality of patients with cerebral hemorrhage

Met.S	NO of	NO of	NO of	No of	MORT	c2	P
Yes	3	53	23	30	44%	103.51	<0.001
Yes	4-5	24	16	8	66.6%		
Total	---	77	39	38	51%	---	---

Relative risk of dysglycemia on mortality of patients with hemorrhagic stroke with metabolic patients

Group	Metabolic syndrome		Total
	+ve	-ve	
DESEASED	29	15	44
SURVIVED	21	12	33
Total	50	27	77

Summary and Conclusion

From above study we have many factors affecting the outcome of patients with cerebral hemorrhage. Metabolic syndrome carries a high risk and can be used as a predictor of mortality. Dysglycemia as a component of metabolic syndrome after adjustment for other risk factors increased risk of cerebral stroke by 2.5 fold than non metabolic syndrome. Also increased risk of mortality among group of met S patients by 1.04 who have cerebral hemorrhage so we recommend: inclusion of metabolic syndrome in guidelines for management of cerebral stroke patients and for early detection and tight control of hyperglycemia as a small change in fasting blood glucose threshold have an important impact on associated cerebral stroke risk

Result

Relative risk of metabolic syndrome on hypertension in hemorrhagic stroke patients

Group	Metabolic syndrome		Total
	+ve	-ve	
TN	6	08	14
ON HTN	1	5	6
Total	7	13	20

$$RR = 76/184 \div 1/56 = 23 \text{ fold}$$

Relative risk of metabolic syndrome on dyslipidemia in hemorrhagic stroke patients.

Group	Metabolic syndrome		Total
	+ve	-ve	
DYSL	47	58	105
NON DYSL	30	105	135
Total	77	163	240

Relative risk of metabolic syndrome on dysglycemia in hemorrhagic stroke patients

Group	Metabolic syndrome		Total
	+ve	-ve	
DM	55	64	119
NON DM	22	99	121
Total	77	163	240

$$RR = 55/119 \div 22/121 = 2.5 \text{ fold}$$

Comparison between number of component as regarding mortality rate of patients with cerebral hemorrhage.

Three components	All components	c2	P
44%	66.6%	91.53	<0.001

References

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