

A Study Of Assessment Of Carotid Intimal Media Thickness In Stroke In A Tertiary Care Hospital

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DOI: 10.47750/pnr.2022.13.S01.261

Abstract

Background: Stroke is one of the leading causes of morbidity and mortality and rank next to coronary artery disease and malignancy. According to WHO “stroke is defined as rapidly developing clinical signs of local or global disturbance of cerebral function lasting more than 24hrs. or leading to death with no apparent cause other than vascular”.

Our study is on relationship of carotid Artery intima media thickness in the cerebra vascular disease and variable risk factor like Hypertension, Diabetes Mellitus etc., causing thrombosis of blood vessel in the cerebro vascular disease in Indian population .

Aims:

A study of assessment of carotid intimal media thickness in stroke in a tertiary care hospital

Materials and Methods:.

The study includes fifty patients of stroke in patients admitted in medical wards and Neurology ward detailed history taking done for risk factors like Smoking, diabetes, Alcohol, Rheumatic valvular heart disease, Tuberculosis and family history of cerebrovascular disease. After collection of data, SPSS 24 was used for statistical analysis of results.

Results: In our study, mean carotid intima media thickness increased in stroke than control. S

Introduction:

Stroke is one of the leading causes of morbidity and mortality and rank next to coronary artery disease and malignancy:^{1, 2} Classically strokes are a disease of the elderly population with a peak incidence between sixth and eighth decades, but not uncommon in younger Age. Carotid intima thickness can be due to multiple causes .Most atheroma produces no symptom and many never cause clinical manifestation. During the initial phases of atheroma development, plaque usually grows outward in a abluminal direction. Vessels affected by atherogenesis tend increase in diameter a phenomenon known as compensatory enlargement. a type of vascular modelling.⁴ Carotid intima media thickness is one of the atherosclerosis changes. Our study focus on involvement of carotid intima thickness in stroke in Indian population .

Tools used:

1. Urine examination for albumin and sugar.
2. Two dimensional echocardiography for detecting cardiac source of emboli.
3. ECG for detecting rhythm disorders was done.
4. CT scan of brain was done to assess the lesion was sinfarcction or hemorrhage and to locate the site of lesion.
5. Doppler study of carotid Artery intimal media thickness both internal and external carotid Artery on both side.

Results:

Table I- Age and Sex Distribution

Age	20-30	31-40	41-50	51-60	> 60
No. of Cases	2	6	12	16	14
Percentage	4	12	24	32	28

Sex	Number of cases	Percentage
Male	32	64%
Female	18	36%
Total	50	100%

Table 2 SIGNIFICANCE OF CAROTID INTIMA MEDIA THICKNESS IN STROKE

	MEAN CAROTID INTIMA MEDIA THICKNESS Mm	STANDARD DEVIATION
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STUDY N150	0.65	0.30
CONTROL N250	0.50	0.20

Standard error difference between two mean is 0.05 which is thrice than difference between carotid intima media thickness in study and control group. So, it is significant

TABLE 3 SIGNIFICANCE OF CAROTID INTIMA MEDIA THICKNESS IN DIABETES MELLITUS WITH STROKE

	MEAN CAROTID INTIMA MEDIA THICKNESS mm	STANDARD DEVIATION
STUDY N16	0.71	0.38
CONTROL N250	0.50	0.20

Standard error difference between two mean is 0.08 which is twice more than difference between mean carotid intima media thickness in study and control group. So it is significant.

TABLE 4 SIGNIFICANCE OF CAROTID INTIMA MEDIA THICKNESS IN HYPERTENSION WITH STROKE

	MEAN CAROTID INTIMA MEDIA THICKNESS Mm	STANDARD DEVIATION
STUDY N116	0.69	0.33
CONTROL N350	0.50	0.20

Standard error difference between two mean is 0.08 which is twice than difference between carotid intima media thickness in study and control group. So it is significant.

Discussion:

In our study 50 adults with stroke were included.

Incidence of stroke was more common in males than females. The incidence in males was 64% when compared to 36% in females. The peak incidence of stroke was observed in the age group 51-60 years which was 32%. Age group > 60 years is also 28%. In our study 84% of stroke was

above 40 years of age. In our study, mean carotid intima media thickness in stroke patients was more than control group. In our study, mean carotid intima media thickness in hypertension was more than control group.

Compared to the normotensive controls, Similar values were seen in studies done by harvest⁵ which showed increased carotid IMT, not only in the common carotid, but also in the bulb and the internal carotid artery. In our study, mean carotid intima media thickness in diabetes mellitus was more than control group. Similar findings were seen in studies done by Kelly et al^{3, 6}. So our study proved strong correlation between carotid intima thickness and stroke .

Limitations:

Small sample size

Conclusion

1. In our study carotid intima media thickness increased in 12% of diabetes mellitus patients with stroke. Carotid intimal media thickness of diabetes increased to develop stroke.

2. In our study carotid intima media thickness increased in 32% of hypertension patients with stroke

In our study, mean carotid intima media thickness increased in stroke than control. So screening of carotid intima thickness in patients with risk stroke is beneficial. .

Acknowledgement: Dr. Punitha, Department of Social and Preventive Medicine, Meenakshi medical college, Kanchipuram.

Sources of Support: Nil

Conflicts of interest: Nil

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