



## A Study to Evaluate Carotid Intima Media Thickness As An Independent Marker for Assessment of Macro Vascular Disease Risk in Daibetes Patients.

## KEYWORDS

Carotid intima media Thickness

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**ABSTRACT** diabetes mellitus is a complex metabolic disorder characterized by a state of chronic hyperglycemia which may lead to various disabling and life threatening and micro vascular complications resulting in reduced quality of life and premature mortality. In this present study it was tried to identify a major problem of type 2 diabetes ,atherosclerosis in subclinical stage by a non invasive method , ultrasound to detect carotid artery intima media thickness a major independent risk factor. **AIMS AND OBJECTIVES** : to compare carotid intima media thickness in type 2 diabetes patients with non diabetic patients. To determine the effect of duration of type 2 diabetes on carotid artery intima media thickness. **METHODS**: the present study was carried out on 100 patients attending to medicine and endocrinology departments king George hospital Visakhapatnam between the period February 2013 to July 2014. **CONCLUSIONS**: in our study CIMT is significantly high in all patients with type 2 diabetes than non diabetics. This study concludes that high CIMT to be a surrogate and reliable marker of atherosclerosis among type 2 diabetics it is being a simple non invasive safe and cheap screening technique.

**Introduction:**

Diabetes mellitus is a complex metabolic disorder characterized by a state of chronic hyperglycemia which may lead to various disabling and life-threatening macro vascular and microvascular complications resulting in reduced quality of life and premature mortality. Patients with diabetes mellitus suffer from unduly premature atherosclerosis. Assessment of sub clinical atherosclerosis as a means of risk stratification , in asymptomatic Individuals but who are at risk of developing future macro vascular complications have been addressed by the development and use of several non invasive imaging modalities .Among those carotid intima media thickness by carotid B mode ultrasonography is non invasive ,inexpensive ,and incurs no radiation ,making it a cost effective and easily applied technique to screen for subclinical atherosclerosis .in this present study it was tried to identify a major problem of type 2 diabetes ,atherosclerosis ,in subclinical stage by a non invasive method ,ultrasound to detect carotid artery intima media thickness as a major independent risk factor.

**Aims and objectives:**

to compare carotid intima media thickness in type 2 diabetes patients with non-diabetic patients. To determine the effect of duration of type 2 diabetes on carotid artery intima media thickness

**Materials and methods:**

present cross sectional case control study was carried out on 100 patients both hospitalized and outpatients attending medicine and endocrinology departments King George hospital Visakhapatnam between the period February 2013 to July 2014. The cases group includes 50 patients with type 2 diabetes and the control group includes 50 patients with out diabetes .All patients included in the study underwent detailed clinical history ,physical examination and necessary investigations .Carotid arteries are examined bilaterally .Ultrasonography scanning of the carotid arteries is usually performed using an ultra sound higher resolution B-mode colour Doppler imaging and an electrical linear transducer is used . measurement of intima me-

dia thickness which increases in the early stages of plaque formation is used as a surrogate marker for atherosclerosis.

**Results and discussion:**

Among the 100 subjects included in this study 50 were cases and 50 were controls . The age of the subjects in the cases group ranged from 35 to 75 years .among 50 cases studied, there were 30 males and 20 females. Among 50 controls there were 25 males and 25 females . The mean carotid intima media thickness In study group in males is 1.17 and in females it is 1.08 and is statistically not significant. Analysis of cases and controls in relation to CIMT shows the mean carotid intima media thickness in cases group is  $1.17 \pm 0.35$  where as mean carotid intima media thickness in control group is  $0.85 \pm 0.10$ . comparison of both groups show statistical significance  $< 0.01$ .

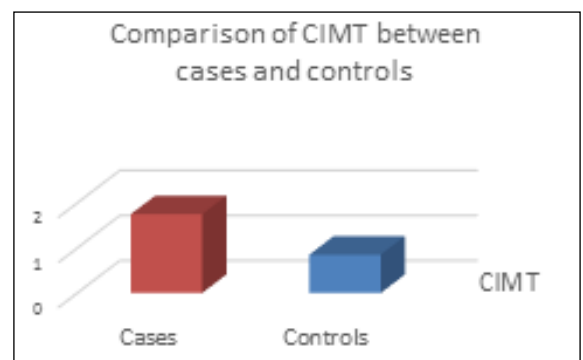


Figure 1 over here

Comparison of duration of diabetes with CIMT as the duration of diabetes mellitus increases the mean CIMT also increases in our study .The mean duration of diabetes in study group is  $8.86 \pm 4.5$  in the cases group on comparing both the duration of diabetes with progression of CIMT .correlation coefficient "r " =0.806,p<0.01 which is highly significant.

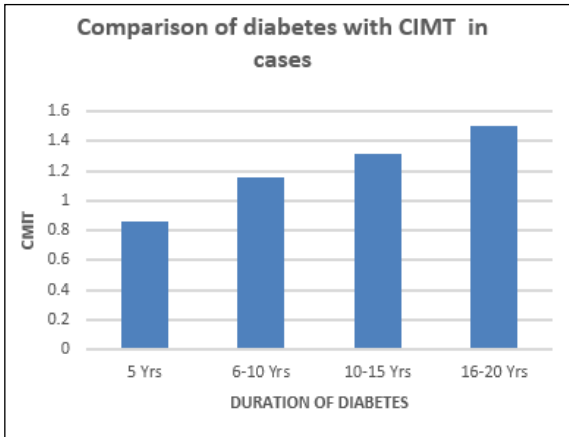


Figure 2 over here

Analysis of cases and controls with respect to glucose levels shows the mean FBS and PPBS in cases group are  $128 \pm 28.16$  and  $220 \pm 30.72$ . In the present study there is proportionate increase in CIMT with increase in post prandial blood sugar values in cases group with PPBS  $< 200$  CIMT  $0.91 \pm 0.26$  with PPBS  $> 300$  CIMT  $1.40 \pm 0.13$ . p value is significant that is  $< 0.06$ .

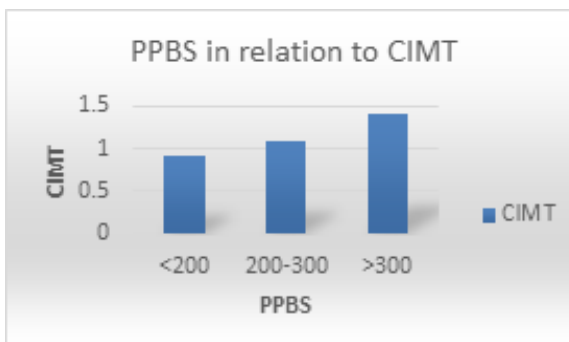


Figure 3 over here.

### Conclusions :

The present study shows that carotid intima media thickness increases with age. In our study CIMT is significantly high in all patients with type 2 diabetes than non diabetics. This study emphasized that as duration of diabetes increases there is progression of CIMT which is statistically significant. This study concludes that high CIMT to be a surrogate and reliable marker of atherosclerosis among type 2 diabetics. The findings of this study clearly show the association of CIMT as a reliable factor for judging atherosclerosis with reference to coronary vasculature, it is a simple non invasive, safe and cheap screening technique.

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