

*The Prevalence Of Atherosclerotic
Carotid Artery Disease In Patients With
Ischemic Heart Disease Using Vascular Duplex*

Thesis

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LIST OF ABBREVIATIONS

*	Ang.	=	Angina.
*	BMI	=	Body mass index.
*	CAD	=	Coronary artery disease.
*	CB	=	Carotid bulb.
*	CCA	=	Common carotid artery.
*	CCCs	=	Characteristics.
*	Chol.	=	Cholesterol.
*	Cig.	=	Cigarettes.
*	CS	=	Carotid stenosis.
*	CVD	=	Cerebrovascular disease.
*	DBP	=	Diastolic blood pressure.
*	Diff.	=	Different.
*	DM	=	Diabetes mellitus.
*	DR	=	Diastolic Ratio.
*	ECA	=	External carotid artery.
*	EDV	=	End diastolic velocity.
*	FBS	=	Fasting blood sugar.
*	2 hrs pp	=	2 hours post prandial.
*	Ht	=	Heart.
*	HTN	=	Hypertension.
*	ICA	=	Internal carotid artery.
*	IHD	=	Ischaemic heart disease.
*	IMT	=	Intima-media thickness.
*	Lab	=	Laboratory.
*	LAE	=	Left atrial enlargement.

*	Lt	=	Left.
*	LMA	=	Left Main Artery Affection.
*	LVH	=	Left ventricular hypertrophy.
*	MI	=	Myocardial Infarction.
*	NCIG	=	Number of cigarettes.
*	No.	=	Number.
*	Path.	=	Pathological.
*	PP	=	Pulse Pressure.
*	PSV	=	Peak systolic velocity.
*	Pts	=	Patients.
*	PVD	=	Peripheral vascular disease.
*	Rt	=	Right.
*	SBP	=	Systolic blood pressure.
*	SR	=	Systolic Ratio.
*	TIA s	=	Transient ischaemic attacks.
*	TG	=	Triglycerides.
*	Vs	=	Vessels.

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ARABIC SUMMARY

Introduction
&
Aim Of The Work

Introduction

Atherosclerosis is a systemic disease with independent rates of occurrence in the coronary arteries, the aortic arch and its branches, the abdominal aorta and the arteries of the lower extremity (*Talley et al, 1990*).

Atherosclerosis in the aortocervical vessels increases steadily with age. Sites of predilection are the origin of great vessels from the aortic arch, aorta, common carotid bifurcation, carotid siphon, proximal middle cerebral artery and proximal and distal vertebral arteries (*Crosby et al, 1992*).

Extracranial vascular atherosclerotic disease has been shown to compromise the cerebral circulation, often leading to the occurrence of stroke (*Kannel et al, 1984*).

Stroke is often a devastating catastrophe that deprives the victims of their dignity, physical prowess, mobility and communication (*Kannel et al, 1984*).

Cerebrovascular accidents may be caused by decreased cerebral blood flow distal to significant stenosis or by embolization of dislodged platelets or atherosclerotic debris (*Salles-Cunha et al, 1988*).

At present, stroke secondary to atherosclerosis is the third leading cause of death in the United States, responsible for about 150,000 deaths per year (*Blatter et al, 1993 and Heartfacts: Cardiovascular statistics, American Heart Association, 1994*).

Approximately 90% of cerebral thromboembolic disease is caused by atherosclerosis (*Osborn, 1994*). Twenty percent of ischaemic strokes arise from carotid stenosis and thrombosis (*Fuster et al, 1989*).

The major risk factors for atherosclerotic thromboembolic brain infarction are hypertension, diabetes, obesity, smoking, hypercholesterolaemia and ischaemic heart disease (*Kannel et al, 1984*).

Carotid artery disease shares an identical vascular pathology with coronary heart disease and in general, they do share the same risk factors (*Berens et al, 1992*).

Previous studies have reported a high incidence of carotid artery disease and liability to develop cerebrovascular strokes in patients with coronary heart disease undergoing various invasive procedures (*Berens et al, 1992*).

The incidence of carotid arterial disease in patients undergoing coronary artery bypass graft varies from 2 to 12%. Postoperative strokes occur in 2 to 3% of all patients following coronary revascularization but in patients with known carotid artery disease, it may occur in up to 20% (*Brener et al, 1984*).

A preventive approach would seem essential then. If vulnerable subgroups of the population who are prime candidates for a stroke can be identified and if there are modifiable predisposing factors, effective preventive measures may be possible (*Kannel et al, 1984*).

Thus screening of patients with ischaemic coronary artery disease especially those undergoing coronary revascularization to detect carotid artery disease is important (*Berens et al, 1992*).

Prior to the availability of non-invasive testing, the evaluation of carotid artery disease was based on either neurological symptoms and clinical assessment or angiography. Although angiography has been the gold standard for evaluation of cerebrovascular lesions, as an invasive procedure, it has inherent risk that may limit its usefulness (*Ricotta et al,*

1990).

Over the last few years, screening diagnostic tools had improved a lot. Duplex scanning had become the most versatile used method of noninvasive carotid evaluation. Besides its non-invasive nature and the negligible degree of patient discomfort, it is highly accurate, reliable and combining the diagnostic advantages of high resolution imaging with pulsed doppler flow spectral analysis thus providing a perfect and sensitive noninvasive method for visualizing the abnormalities of arterial wall and evaluation carotid blood flow (*Ricotta et al, 1990*).

Sensitivities of 95%, 96% and 98.8% using duplex imaging to evaluate carotid artery lesions had been achieved by *Johnson, 1981, Zweibel et al, 1983 and Hames et al, 1985* respectively.

In Egypt, no data are available about the prevalence of carotid atherosclerosis among patients with ischaemic coronary artery disease and many questions remain unanswered including the value of early detection of carotid atherosclerosis and its role in minimizing the risk of developing cerebrovascular strokes.

Aim of the study:

The aim of the present study is to detect the incidence of carotid artery disease in patients with significant coronary heart disease proven by coronary angiography using vascular duplex and to compare the prevalence of identifiable risk factors in those with and without carotid artery disease.