Risk factors associated with the severity of coronary artery disease among patients undergoing coronary angiography and Percutanoues coronary intervention in El-Kasr El-Aini University Hospital: Registry Study.

A Thesis

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By

Leena Ateeq Mohammed Al Yemeni M.B. B.CH.

Supervisor

Magdi Mukhtar, MD.
Professor of cardiology,
Cairo University

Zeinab Ashour , MD.
Professor of cardiology,
Cairo University

Amr Al faramawi, MD **.**
Lecturer in cardiology,
Cairo University

FACULTY OF MEDICINE
CAIRO UNIVERSITY
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Contents

Abstract

The incidence of coronary artery disease (CAD) has increased in Egypt. We conducted this study to determine the data of CAD patients at our hospital, and to identify the prevalence of conventional risk factors of CAD and their effects on the severity of underlying coronary lesions.

Object of the study:

To know the demographic, clinical, and angiographic features of patients who underwent coronary angiography or Percutanoues coronary interventions at our hospitals.

Methodology:

It is a retrospective study where records of 1700 patients who had undergone coronary angiography and Percutanoues coronary intervention between 2006 and 2008, were analyzed.

Demographic features, clinical data, risk factors and angiographic profile, were studied.

Summary of results:

Mean age of the patients was 53.84 ± 9.5 (from ≤45 - >65 year). 73.6% were males and the rest (26.4%) were females.

About 37.2% of patients had documented risk factors profile, in which diabetes mellitus(55.5%),hypertension(47,4%)were the most common risk factors , followed by smoking(26.5%), dyslipidemia (8.8%),family

history of CAD(5.6%)and obesity(0.7%). Fifty patient had no any conventional risk factors for CAD.

Unstable angina and STEMI were most common indications for coronary catheterization. 74.5% of patients underwent only diagnostic coronary angiography, 25.5% had PCI. 185 patient (10.9%) had previous PCI and 69 patient (4.1%)with history of previous CABG.

SVD (21.5%) was more prevalent than double vessel disease(19.1%), MVD(39.5%). LAD (62%) was the commonest to be involved followed by RCA (37.7%) and LCX (22.7%). Normal coronary angiogram was noted in 20% of patients .

In stent restenosis was in 89 case (48%)of patients with previous PCI. Patients with previous CABG had (46.3%)SVG stenosis and (18.8%) LIMA stenosis. Coronary thrombosis was in 3.6% and mainly in RCA. Ectasia was in 7.2% of patients, it prevalent in SVD (5.1%), in DVD 1.2% and in triple vessels in 0.8%. RCA was the most common artery affected by ectasia.

20.9% of patients referred for urgent CABG, 13.1% for PCI and 34.7% of patients to be continuous on aggressive medical treatment.

Conclusion:

Results from our series confirm the multifactorial nature of coronary artery disease. Multivessel disease are highly distributed among Egyptians. Early detection of coronary artery disease risk factors and coronary anatomy are mandatory for a successful therapeutic strategy. PCI is a safe procedure even in the setting of acute coronary syndromes.

Key words: CAD risk factors, Coronary angiography, Percutanoues intervention, Egyptians.

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Abbreviation	***Meaning***
ACS	Acute Coronary Syndrome
AHA	American Heart Association
AV	Atrioventricular
AVN	Atrioventricular node
BP	Blood Pressure
BMI	Body Mass Index
CAD	Coronary Artery Disease
CHD	Coronary Heart Disease
CVD	Cardiovascular Disease
CABG	Coronary artery bypass graft
CHF	Congestive heart failure
CRP	C- reactive protein
D.M	Diabetes Mellitus
DVD	Double vessel Disease
ESR	Erythrocyte sedimentation rate
FH	Family history
HF	Heart failure
HTN	Hypertension

HDL	High density lipoprotien
IL-6	Interleukin-6
LMCA	Left main coronary artery
LAD	Left anterior descending artery
LCX	Left circumflex artery
LIMA	Left internal mammary artery
LA	Left atrium
LV	Left ventricle
LVH	Left ventricular hypertrophy
LDL-C	Low density cholesterol
LPa	Lipoprotein a
MI	Myocardial infarction
M_1,M_2	$Marginal_1$,$Marginal_2$
METs	Metabolic equivalent
MVD	Multivessel disease
NO	Nitric oxide
NSTEMI	Non-ST elevation MI
O_2	Oxygen
PCI	Percutanoues coronary intervention
PDA	Posterior descending artery
PVD	Peripheral vascular disease

RCA	Right coronary artery
RA	Right atrium
RV	Right ventricle
RR	Relative Risk
SICAM-1	Soluble intracellular adhesive molecule
SVCAM-1	Soluble vascular cell adhesive molecule
SMC	Smooth Muscle Cell
SAN	Sinoatrial node
STEMI	ST- Elevation MI
SVD	Single vessel disease
SVG	Saphenous vein graft
TOD	Target organ damage
TLC	Therapeutic life change
TNF	Tumour necrotic factor
vWF	von Willebrand factor
USA	United State Of America

REVIEW OF LITERATURE

INTRODUCTION

Coronary artery disease (CAD) or atherosclerotic heart disease is the end result of accumulation of atheromatous plaques within the walls of coronary arteries[i] that supply the myocardium(the muscles of the heart) with oxygen and nutrients. It is sometimes also called coronary heart disease (CHD), but although CAD is the most common cause of CHD, it is not the only cause.

CAD is the leading cause of death worldwide . It affecting the majority of adults passing age of 60 years . The prevalence of CHD is approximately one- third to one -half that of total cardiovascular disease (CVD) .While the symptoms and signs of CAD are noted in the advanced state of the disease ,most individuals with coronary artery disease show no evidence of disease for decades as the disease progress before the first onset of symptoms, often a sudden "heart attack" finally arise .

After decades of progression , some of these atheromatous plaques may rupture and (along with activation of blood clotting system) start limiting blood flow to the heart muscles. The disease is the most common cause of sudden death [ii] , and it is also the most common reason for death for men and women over 20 years of age [iii] . In united state of America itself, about 12.6 million Americans suffer of CAD which often result in heart attack . About 1.1 million of them suffer of a cardiac attack each year ,about 515,000 of these attacks are fatal .

According to present trends in USA , half of healthy 40 years old males will develop CAD in the future, and one in three healthy 40 years old women[3] . In the past , CAD was once widely thought to be disease of men . On average , men develop it about 10 years earlier than women because, until menopause, women are protected by high level of estrogen. However, after menopause , CAD become more common among women . Among people aged 75 and older , a higher proportion of women have the disease , because the women live longer . The rate of death from CAD increases with age and overall is higher in men than for women, particularly between age of 35 and 55. After age of 55 , the death rate for men declines , and the rate for women continues to climb . After age of 70 – 75, death rate for women exceeds that for men at same age .

There are many risk factors associated with occurrence of CAD , some of them are modifiable and some are not. Modifiable risk factors include: high blood pressure, high cholesterol level in the blood, cigarette smoking, physical inactivity, diabetes ,obesity, dietary factors, alcohol, stress .Heredity, being male. age , are not modifiable risks .

Aim of this study is to correlate between CAD and associated risk factors , and the effect of these risks on the severity of underlying CAD in Egyptian patient underwent coronary angiography or Percutanoues intervention. .