

## CHAPTER 7:

# RISK FACTORS AND PREVENTION OF CORONARY ARTERY DISEASE

## OVERVIEW

### Definitions

A cardiovascular risk factor is a characteristic found in a healthy person that independently increases the risk of coronary artery disease (CAD). The risk factor can be a lifestyle habit, an environmental factor, or an inherited characteristic. Cardiovascular risk factors are classified as modifiable and non-modifiable.

### Risk Factor Statistics

- ◆ About 90% of CAD patients have prior exposure to at least 1 of these major risk factors, which include high total blood cholesterol levels or current medication with cholesterol-lowering drugs, hypertension or current medication with blood pressure-lowering drugs, current cigarette use, and clinical report of diabetes.
- ◆ Nine easily measured and potentially modifiable risk factors account for over 90% of the risk of an initial acute MI. The effect of these risk factors is consistent in men and women, across different geographic regions, and by ethnic group. These 9 risk factors include cigarette smoking, abnormal blood lipid levels, hypertension, diabetes, abdominal obesity, a lack of physical activity, low daily fruit and vegetable consumption, over consumption of alcohol, and psychosocial index.
- ◆ Taking into account CAD risk factors in combination provides a very potent predictor of 10-year risk of CAD compared with individual risk factors.

(Thom et al., 2006).

### Prevention of CAD

- ◆ Primary prevention is defined as reducing risk in people without known CAD to prevent the development of the disease in the future. Atherosclerosis begins early in life, often before the age of 20.
- ◆ Secondary prevention is defined as reducing risk in people with known CAD to prevent a future event.
- ◆ The lines between primary and secondary prevention are merging, with the increased understanding of the progression of coronary atherosclerosis.

### Risk Equivalents

Those at greatest risk for developing new coronary artery atherosclerotic plaque are people with a history of CAD. Those with a *risk equivalent* for CAD have the same risk for having a cardiac event as someone with a history of CAD.

There are three CAD risk equivalent groups:

- ◆ People with other forms of atherosclerotic vascular disease (peripheral vascular disease, abdominal aortic aneurysm, or symptomatic carotid disease).
- ◆ People with type II diabetes.
- ◆ People with two or more CAD risk factors who score at the equivalent risk on the Framingham risk tool (a mathematical health risk appraisal model in which points are assigned to each risk factor in order to calculate the probability of developing CAD in a 2-year period).