Introduction

In only two thirds of patients of atherosclerosis, classical risk factors such as cigarette smoking, hypertension, diabetes mellitus, left ventricular hypertrophy, alcohol abuse, obesity, or positive family history can be detected**.** Therefor, the search for other risk factors which can accelerate the progression of process of atherosclerosis, has been continued**.** Newly discovered cardiovascular risk factors include :
Hyperhomocysteinemia, lipoproteinemia, C-reactive protein (CRP), hyperfibrinogenemia, and inflammatory factors **(Skibinska et al ,.2004)**.

Hyperhomocysteinemia is considered a major risk factor for premature atherosclerosis and arterial venous thrombosis **(Nedreb et al.,1998)**.

Kang et al (2003), have classified hyperhomocysteinemia as :

- Mild : total plasma homocysteine concentration (tHCY) , 15-30 umol/L.
- Moderate : tHCY concentration, 30-100 umol/L.
- Severe : tHCY concentration > 100 umol/L.

Vitamin B deficiency is probably the commonest cause of hyperhomocysteinemia. Folic acid and vitamin B_{12} are required for remethylation of homocysteine and even subclinical deficiency of these vitamins can increase plasma homocysteine levels **(Selhub et al.,1993).**

The elderly are particularly susceptible to the development of sub-clinical vitamins deficiencies and 30-35 % of elderly subjects have moderate hyperhomocysteinemia **(Naurath et al.,1995).**

The problem with homocysteine is that even 70 % is bound to plasma proteins in the blood stream, it is a potent toxin to cells that line the blood vessels (endothelial or intimal cells) and interacts with specialized proteins and cells in the blood to easily clot **(Kullo et al., 2000).**

Homocysteine also indirectly activates the procoagulant endothelial cell factor V **(Rodgers et al.,1986),** and inactivates the anticoagulant substances, protein C and thrombomodulin, aiding formation of thrombin. Homocysteine stimulates platelet generation of the thromboxane A_2, which is a vasoconstrictor and procoagulant **(Lentz et al., 2005)**.

Aim of the work

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The aim of the work is to study the serum level of homocystiene in patients having acute myocardial infarction , and to explore a possible relationship between the homocysteine level as a risk factor for the occurrence of acute myocardial infarction and its complications during the CCU admission course.