SUMMARY

Interleukin-8 (IL-8) is a cytokine and a potent chemoattractant for neutrophils. In addition, this cytokine is currently considered to have regulatory and activating effect on neutrophils.

Infiltration of the myocardium by neutrophils and mocytes/macrophages is observed in patients with coronary artery diseases. IL-8 regulates and activates neutrophils in acute inflammation. Moreover, IL-8 has a regulatory role in ischemic and reperfused myocardium, and has been hypothesized to participate in neutrophil mediated myocardial injury. Recently, a highly sensitive enzyme immunoassay was developed for IL-8.

The aim of this work to determine whether measurement of IL-8 could be used as an early indicator of acute myocardial infarction (AMI) also to detect the effect of thrombolytic therapy on the level of IL-8.

The present work was conducted between October 1997 to April 1998 in the coronary care unit (CCU) of Benha University hospital.

In this study, subjects were classified into three groups. Group I which included fourteen patients with AMI have received thrombolytic therapy (The thrombolytic therapy used was streptokinase). Group II which included thirteen patients with AMI have not received thrombolytic therapy and group III which included fifteen healthy control subjects.

These patients were subjected to full clinical assessment, 12 lead ECG and laboratory investigation (serum CK-MB, total leukocytic count and serum IL-8) at 0, 3, 12 and 24 hours after the admission.

Serum IL-8 in group I (who have received thrombolytic therapy) showed a mean peak serum value of 380 ± 308 pg/ml at 4.5 ± 1.2 hours while in group II (who have not received thrombolytic therapy) showed a mean peak serum value of 318 ± 275 pg/ml at 6.5 ± 3.2 hours while levels of serum IL-8 in group III (control group) were 4.7 ± 2.2 pg/ml.

Also, serum CK-MB in group I showed a mean peak serum value of 119 ± 11.2 IU/L at 11.8 ± 3.8 hours, group II showed a mean peak serum level of CK-MB 93 ± 17.5 IU/L at 19.4 ± 4.8 hours while in group III "control group" showed mean serum value of CK-MB 12.3 ± 3.6 IU/L.

Total leukocytic count in group I showed maximal value of 14.1 ± 2.3 x $10^3/mm^3$ at 11.8 ± 3.9 hours, in group II showed maximal value of 12.4 ± 2.3 x $10^3/mm^3$ at 22.1 ± 5.3 hours while in group III "control group" showed mean total leukocytic count 5.7 ± 1.2 x $10^3/mm^3$.

From our study mentioned above and from the curves plotted for (serum IL-8, serum CK-MB and total leukocytic count), Biochemical markers to detect the early phase of AMI include serum level of IL-8, serum level of CK-MB and total leukocytic count, serum IL-8 was elevate earlier than CK-MB and total leukocytic count in regard to both the initial rise and the maximal rise. So IL-8 could be an earlier predictor of AMI. Also, the effect of thrombolytic therapy on biochemical markers

cause early and highly peaking and decreased earlier than the non thrombolytic group in serum CK-MB, total leukocytic count and serum IL-8 but serum IL-8 was elevated and peaked earlier than CK-MB and total luekocytic count. This result suggest that thrombolysis does not amplify the inflammatory response and may indeed suppress it.

Early diagnosis of AMI is essential for prompt therapy, optimal management and favorable prognosis. Such diagnosis depends entirely on a rapid and specific test. Measurement of serum IL-8 may be a new diagnostic tool for detecting AMI. If these preliminary results are confirmed, a more rapid and improved method for assaying IL-8 could be developed.