
Clinical characteristics and short and intermediate term prognosis of myocardial infarction with normal coronary angiogram

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The present study aimed to study the clinical characteristics, risk factors and short and intermediate term prognosis of myocardial infarction patients with normal coronary angiogram and to compare this with those of myocardial infarction patients with coronary artery obstructive disease. This study was performed on 40 cases (33 males and 7 females) of acute myocardial infarction who were screened prospectively. Their ages ranged between 25 years and 63 years with a mean age of 44 ± 19 years. The study patients were divided according to their coronary angiographic findings into two groups :-

- Group A : consisted of 20 patients (15 males and 5 females) with normal coronary arteries.
- Group B: consisted of 20 patients (18 males and 2 females) with coronary artery stenosis.

Each patient included in our study was subjected to the following:

- (A) Full history taking.
- (B) Through medical examination.
- (C) Investigations: Each patient was subjected to the following types of investigations :
 - 1-ECG evaluation: A complete 12 lead ECG was recorded at admission.
 - 2-Cardiac enzyme assay: including CK, CK-MB, LDH and troponine I were all done on admission and followed up every 6 hours.
 - 3-Coronary Angiographic evaluation: This was the gold-standard investigation of this study as according to the results of which the patients were divided into the two main groups of the study, the group of normal coronary angiogram and the group of coronary artery stenosis. Selective coronary cine angiography was performed with Judkins technique within 10 days of admission.
 - 4-Laboratory investigations for detection of coagulation disorders: The following laboratory investigations were done :-
 - Quantitative measurement of protein C and protein S.
 - Quantitative measurement of fibrinogen level.
 - Quantitative measurement of homocysteine level.
 - 5-Holter ECG Monitoring: A 48 hours ECG recording in conjunction with a patient - activated event recorder was done to each patient.
 - 6-Echocardiographic evaluation: A trans-thoracic echocardiography was done to each patient for evaluation of wall motion abnormalities, estimation of left ventricular systolic function, determination of the presence of any mechanical complications and detection of the presence of intracavitary masses or thrombi.
 - 7-Follow up: All patients were followed up for 6 months for the occurrence of any clinical events.

The results of this study revealed the following :-

- (A) Clinical variables: It was evident that there was no significant statistical difference in the percentage frequency of some of the clinical variables (namely sex, smoking habit, hypertension and the presence of family history of

premature coronary artery disease). But on the other hand there was a significant statistical difference in the percentage frequency of other clinical variables. The mean age of group A patients was significantly lower than the mean age of group B patients. On the same way, the percentage frequency of the presence of diabetes mellitus and hyperlipidemia was significantly higher among group B patients than group A. (B) Investigations:-

- ECG: There was no significant statistical difference in the percentage frequency of the occurrence of anterior infarction relative to the overall number of infarction between the two groups.
- Echocardiography: The mean LVEF was significantly higher among group A patients in comparison to group B patients.
- Holter ECG: There was no significant statistical difference in the occurrence of coronary spasm between the two groups.
- Coagulation abnormality: There was no significant statistical difference in the presence of hyperfibrinogenemia nor protein C or S deficiency between the two groups.
- Homocysteine level: Hyperhomocysteinemia was significantly higher among group A patients in comparison to group B patients.

(C) Follow up and prognosis: The occurrence of heart failure, re-infarction and cardiovascular mortality was more prevalent among group B patients, but yet this was statistically insignificant. However, by comparing the combined end point defined as occurrence of any of these complications, it was found that there was a significant statistical difference between the two groups with a higher prevalence among group B patients.