

Study of different parameters of blood among various types of acute coronary syndrome**Mayur Garg*, Saurabh Borakhade, Sandeep Rai***Department of Medicine, MGM Hospital, Kamothe, Navi Mumbai, India***Received: 12-10-2020 / Revised: 22-11-2020 / Accepted: 15-12-2020****Abstract**

Coronary artery disease (CAD) is the leading cause of mortality and morbidity in the world and acute coronary syndromes (ACS), which encompass unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI) and ST-segment elevation myocardial infarction (STEMI), are the commonest causes of mortality in patients with CAD. The present study aimed to find out the values of various parameters of blood and their correlation among the types of Acute Coronary Syndrome among the study population. The study concluded that there was no statistically significant difference observed in Mean Haemoglobin, Total leucocyte count, Platelet count and Creatinine level amongst different type of myocardial infarction.

Keyword: Acute Coronary Disease, heart, angina.

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Introduction

Coronary heart disease [CHD] is a global health problem that affects all ethnic groups and contributes substantially to premature death, disability and the escalating costs of health care[1]. Coronary artery disease (CAD) is the leading cause of mortality and morbidity in the world and acute coronary syndromes (ACS), which encompass unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI) and ST-segment elevation myocardial infarction (STEMI), are the commonest causes of mortality in patients with CAD. With the introduction of a huge armamentarium of invasive and non-invasive therapeutic strategies, the mortality related to ACS has significantly reduced in the developed world over the past 20 years[1]. The prevalence of CAD and the incidence of ACS also are very high among Indians[1]. India has the highest burden of ACS in the world. The rising incidence of ACS in Indians may be related to the changes in the lifestyle, the westernization of the

food practices, the increasing prevalence of diabetes mellitus and probably genetic factors. CREATE registry, the largest data from Indian patients with ACS, has shown that the pattern of ACS among Indians is much different from that of the Western populations[1].

Aim

The present study aimed to find out the values of various parameters of blood and their correlation among the types of Acute Coronary Syndrome among the study population.

Methods

The study was conducted at a hospital set up with 100 patients admitted in the hospital with acute coronary syndrome. The patients were selected randomly and were between age 30 years to 70 years and above.

25 patients were female and 75 were male patients.

Inclusion Criteria

- Known cases of acute coronary syndrome.
- Age group between 30 years to 70 years and above.

Exclusion Criteria

- Patients not having acute coronary syndrome.
- Patients below 30 years of age

Investigations**Statistical Analysis**

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Table 1 :Age distribution amongst study population

| Age group | Frequency | Percent |
|--------------------|-----------|---------|
| 30 to 40 years | 8 | 8.0 |
| 41 to 50 years | 25 | 25.0 |
| 51 to 60 years | 32 | 32.0 |
| 61 to 70 years | 22 | 22.0 |
| more than 70 years | 13 | 13.0 |
| Total | 100 | 100.0 |

As seen in the above table, most of the study population belongs to the age group of 51 to 60 years (32%) followed by 41 to 50 years (25%) and 61 to 70 years (22%) with the mean age of 57 ± 11.7 years.

Table 2: Gender distributions amongst study population

| Gender | Frequency | Percent |
|--------|-----------|---------|
| Female | 25 | 25.0 |
| Male | 75 | 75.0 |
| Total | 100 | 100.0 |

As seen in the above table, there was male predominance (75%) amongst study population as compared to female (25%)

Table 3 :Type of ACS amongst study population

| Type of ACS | Frequency | Percent |
|-----------------|-----------|---------|
| NSTEMI | 24 | 24.0 |
| STEMI | 63 | 63.0 |
| Unstable angina | 13 | 13.0 |
| Total | 100 | 100.0 |

As seen in the above table, most of the study population had STEMI (63%) followed by NSTEMI (24%) and Unstable angina (13%).

Table 4:Various parameters in type of ACS amongst study population

| | Unstable angina | | NSTEMI | | STEMI | | P value |
|-----------------------|-----------------|--------|---------|---------|---------|--------|---------|
| | Mean | SD | Mean | SD | Mean | SD | |
| Haemoglobin | 12.5 | 1.8 | 13.3 | 1.8 | 13.3 | 2.1 | 0.356 |
| Total leucocyte count | 10370.2 | 3102.2 | 14085.5 | 20323.5 | 10830.5 | 4054.9 | 0.396 |
| Platelet count | 2.5 | 1.1 | 2.5 | 0.7 | 2.6 | 0.7 | 0.899 |
| Creatinine | 0.9 | 0.2 | 0.9 | 0.2 | 0.9 | 0.3 | 0.977 |

As seen in the above table, there was no statistically significant difference in mean haemoglobin, total leucocyte count, platelet count and Creatinine level amongst different type of myocardial infarction.

Discussion

Acute coronary syndrome (ACS) is one of the main causes of hospital admission in western countries. In fact, cardiovascular disease, particularly acute myocardial infarction, is the leading cause of death in these countries[1]. In the present study, most of the study population belongs to the age group of 51 to 60 years (32%) followed by 41 to 50 years (25%) and 61 to 70 years (22%) with the mean age of 57 ± 11.7 years. Increasing age is considered the most significant risk factor for ACS. Individuals aged more than 45 years have an eight times greater risk for ACS[3]. Similarly in the study conducted by Farhin Iqbal et al.,

the mean age at presentation of ACS cases was 56.5 years, which is a decade earlier than western studies and is comparable with mean age of cases from the Indian studies[4]. In the present study, there was male predominance (75%) amongst study population as compared to female (25%). The findings of present study are consistent with previous investigators who have reported that ACS is more common in males. Huma et al in 2012, found that at any given age men are more at risk than women, particularly before menopause, at least part of the apparent protection against coronary artery disease in premenopausal women derives from their relatively higher HDL levels compared with those of men[1].

In the present study, most of the study population had STEMI (63%) followed by NSTEMI (24%) and Unstable angina (13%). These findings are in agreement with the study by Rajni Sharma et al. , the most common presentation among ACS patients is

STEMI in comparison to UA or NSTEMI. This finding was in agreement with the study conducted by Shiv Shankar Singh et al [2], in which Of the 491 cases, STEMI were 75.99%.

In the present study, mean duration of Haemoglobin, total leucocyte count, Platelet count and Creatinine was 13.2 ± 2 , 11551.9 ± 10463.9 , 2.5 ± 0.7 and 0.9 ± 0.2 respectively. In the present study, there was no statistically significant difference observed in mean haemoglobin, Total leucocyte count, Platelet count and Creatinine level amongst different type of myocardial infarction or acute coronary syndrome.

Conclusion

The study found that STEMI was the most common type of ACS followed by NSTEMI and Unstable angina with anterior wall MI followed by inferior wall MI. The study concluded that most patients belongs to the age group of 51 to 60 years (32%) followed by 41 to 50 years (25%) and 61 to 70 years (22%) with the mean age of 57 ± 11.7 years and there was no statistically significant difference observed in Mean Haemoglobin, Total leucocyte count, Platelet count and Creatinine level amongst different type of myocardial infarction.

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