

ADMISSIONS DUE TO ACUTE MYOCARDIAL INFARCTION AND DAY OF THE WEEK

M. Tahir Khattak, S. Nasir Hussain Shah Kazmi

ABSTRACT

A retrospective analysis was carried out of patients admitted to Cardiac Care Unit (CCU) of Civil Teaching Hospital, Abbottabad over a one-year period with an acute myocardial infarction. The number of admissions due to acute myocardial infarction on each day of the week was looked at, both in males and females of all age groups. There was a significant difference from the uniform distribution with peak admissions on Saturdays and a minimum number of admissions on Fridays.

INTRODUCTION

With changing socio-economic conditions there has been a gradual increase in the incidence of coronary artery disease and its related complications in Pakistan. There is an increased awareness in the general public about heart diseases in general and heart attacks in particulars.

Several studies have shown and documented a circadian variation in the occurrence of myocardial infarction and sudden cardiac death with a peak incidence in the early hours of the morning.^{1,2} There is also a seasonal variation with an increased occurrence of myocardial infarction in the winter months. The purpose of our study was to look only at admission trends on each day of the week and to propose reasons for the variation, if any, in acute myocardial infarction related hospitalization.

MATERIALS AND METHODS

The CCU, of Civil Teaching Hospital, Abbottabad receives patients 7 days a week, mostly with suspected acute myocardial infarction. The case notes of all patients admitted to the CCU from June 91 to May 92 were studied. 360 patients were found to have had a definite acute myocardial infarction. Patients were excluded if there was incomplete documentation or non-availability of ECG for interpretation. 23 patients were excluded from the study. Patients were subsequently assigned to their admission day of the week. It was not the purpose of the study to look at the time of occurrence or onset of symptoms of myocardial infarction.

RESULTS

360 patients were included in the study. There were 269 males and 91 females of all age groups (32-86 years).

From Ayub Medical College, Abbottabad.

M. TAHIR KHATTAK, MBBS, MRCP, D. CARD, Assistant Professor Cardiology.

NASIR HUSSAIN SHAH KAZMI, MBBS, Medical Officer, Civil Teaching Hospital, Abbottabad.

Admissions on each day of the week were analysed. There was a statistically significant difference from the uniform distribution. Table-1 shows a maximum number of admissions on Saturdays in both males and females and a minimum number of admissions on Fridays in both the sexes. In fact, the number of admissions on Saturdays are more than twice (> 50%) that of Fridays. The total number of admissions due to acute myocardial infarction at the start of the week i.e. Saturday and Sunday for outweighs that towards the end of the week i.e. Thursday and Friday. In the middle of the week the number of admissions showed a stable pattern.

Table -1: RELATION OF THE NUMBER OF ADMISSIONS DUE TO ACUTE MYOCARDIAL INFARCTION TO DAYS OF THE WEEK.

Day of the week	Males	Females	Total	Percentage of Total Admissions
SAT	49	17	66	> 18%
SUN	43	14	57	> 15%
MON	38	15	53	> 14%
TUE	42	10	52	> 14%
WED	39	14	53	> 14%
THU	36	11	47	> 13%
FRI	22	10	32	<9%
Total	269	91	360	

DISCUSSION

Several studies in western countries have investigated the relationship between the occurrence of myocardial infarction and the days of the week. The reported an excess incidence of acute myocardial infarction on Mondays and Saturdays.³ The incidence of mortality due to myocardial infarction is also highest on Mondays and Saturdays.⁴ In Western countries there is a particular weekly pattern of working conditions. Mondays and Saturdays, being the start and the end of the week there, are the days on which people most adjust to new conditions, whether it is work or leisure. The stress of returning to work may precipitate a myocardial infarction.

The same social set-up or working conditions do not exist or prevail in this part of the world. We feel that the peak number of admissions on Saturday with a trough on Friday is most likely to be due to the attitude of the patients and their relatives regarding the working days and conditions of hospitals, laboratories and physicians. Many amongst the general public, especially in the rural areas, are likely to be under the impression that on Fridays the hospital and laboratories may be closed and doctors not available. As such they are not likely to be admitted, investigated and treated. So, there is a tendency to be 'SIT' on the patient till the next working day i.e. Saturday before they come for their admissions. The relative paucity of admissions on Thursday could also be a reflection of the above given phenomenon i.e. tomorrow being Friday and a holiday so best

wait till Saturday. Patients and their relatives should be told and encouraged to seek help early and general practitioners should refer patients with suspected acute myocardial infarction for admission to their CCU's on any day of the week in order to save precious lives.

REFERENCES

1. Muller, J.E., Stone, PH, Turi, Z.G. et al. Circadian variation in the frequency of onset of acute myocardial infarction. *N Engl J. Med* 1985; 313: 1315-22
2. Muller, J.E., Judmen, P.L., Willich, S.N. et. al. Circadian variation in the frequency of sudden cardiac death. *Circulation* 1987; 75: 131-8
3. Tompson, D.R., Pohl, J.E.F. and Sutton, T.W. Acute Myocardial Infarction and day of the week. *Am J of Card*; Jan 15,1992, Vol 69, No. 3: 266-67.
4. Massing, W. and Angermeyer, M.C. Myocardial infarction on various days of the week. *Psychol Med* 1985; 25:851-857