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Epidemiological evaluation of cases admitted as acute myocardial infarction to Al Ramadi General Hospital Coronary Care unit for the year 2007

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ABSTRACT
Objective: Epidemiological evaluation of cases of myocardial infarction admitted to the coronary care unit of AL-Ramadi General Hospital in the year 2007.
Patients and Methods: All cases admitted as acute myocardial infarction to the coronary care unit of AL-Ramadi General Hospital in the year 2007, according to CCU records, were included in this study.
Results: Of those 131 cases of acute myocardial infarction, only 116 cases were proved to be true cases of myocardial infarction, with a sea distribution of 73% males and 27% females. Significant percentages of patients had risk factors (hypertension, diabetes mellitus, smoking), with predominance in females. Regarding rural and urban distribution, the incidence was nearly equal. The prevalence of deaths was 12.9%, with predominance in females. There was a significant deference in the number of admissions during the months of the year 2007.
Conclusion: The documentation of data in the CCU was improper and needs to be reevaluated.

Introduction

Myocardial infarction (MI) is a main cause of mortality and morbidity in different societies (3). MI treatment and management have changed dramatically over the last 50 years. (9) Coronary care units (CCU) appear first in 1962 in Australia (1) and then distributed to other countries. A controversy developed on its benefit on MI management at that time, but its benefit was established after that, and it was settled for the clear reduction in the mortality of MI with the admission of infarction cases to the CCU (2, 3). Epidemiology of cases of MI management in the CCU in developing countries is not clear because of the paucity or lack of studies in this field. In Iraq, thrombolytic therapy was introduced recently, and angioplasty intervention for acute MI is nearly absent. In this study, we try to evaluate the epidemiology of cases diagnosed at admission as acute MI in the CCU of AI-Ramadi General Hospital.

Acute coronary syndrome (ACS) includes three entities within the different manifestations of coronary heart disease: non-ST-segment elevation myocardial infarction (NSTEMI), ST-segment elevation myocardial infarction (STEMI), and unstable angina (UA)).

Acute coronary syndromes represent a manifestation of atherosclerosis. Under normal conditions, they are manifested by the occurrence of acute thrombosis caused by rupture or erosion of an atherosclerotic plaque, with or without concomitant vasoconstriction, resulting in a sudden and critical reduction in blood flow.

Acute myocardial infarction (AMI) involves ischaemic cardiac cell death due to an imbalance of perfusion-demand. The ischaemic attack is usually sudden, characterised by precordial pain that rapidly gains in intensity, radiating to the left arm through the ulnar border, neck, jaw, back, shoulders, and epigastrium; other irradiations are to the elbow, wrist, fourth and fifth fingers of the left hand and, finally, the whole clinical picture may present on the right, then called Libman's contralateral irradiation.

Patient and method:

This was a retrospective study conducted in the CCU of Al-Ramadi General Hospital. All the patients admitted to the CCU for the period 1/1/2007 — 31/12/2007 and diagnosed at admission as acute MI according to CCU documentation records were included in the study. The data were obtained from the case sheets of those patients. Diagnosis of MI in this CCU depended mainly on clinical picture and electrocardiography. There was no information in the case sheet regarding cardiac enzymes. Statistical analysis was conducted by SPSS V. 14 software.

Following the principles of medical ethics, while ensuring anonymity, information will only be disclosed with scientific interest in appropriate frameworks and with the approval of the Ethics Committee and the Scientific Committee of the institution. The information obtained from the sample was processed using the SPSS Soft statistical package, which will enable the use of descriptive statistics when necessary. To determine the degree of homogeneity of the behavior of variables in the different years of study, frequency distribution tables calculated in hundreds were prepared. All qualitative variables were summarized in absolute and relative percent frequencies. Quantitative criteria are summarized by measures of central location and variance, with a 95% confidence interval.

Results

The number of patients admitted to the CCU for the year 2007 was 1211 cases. Of them, 743 cases were ischemic heart disease; details of these cases is seen in Table 1. The number of patients labeled as MI admitted to the CCU in this period was 131 (which was taken from CC U documents); of them15, patients were excluded because they didn't have MI by reviewing their case sheets. Of the 116 patients who remained, 85 patients of them were males, 73.3 %, and 31 patients of them were female 26.7%. The details of the case data are shown in Table 2. Table 3 shows the distribution of admission of MI cases in Al-Ramadi CCU for the year 2007.

Diagnosis	No.
Angina	533
Unstable angina	79
MI	131
OTHERS i.e., heart failure, Cerebrovascular accident, pulmonary embolism, asthma, trauma, pulmonary odema	468
Total	1211

Table l- Distribution of admission diagnosis in Al-Ramadi CCU for the year 2007.

Sex	No%	Mean age	Dm%	Ht %	Smoking %	Altepase used	Death %	Average Stay	Urban %``	Rural %
M	85 73.3%	55.65 ± 11.9	24 28.2%	22 25.9%	40 50.9%	5	7 8%	3.7	44 51.8%	41 48.2%
F	31 26.7%	60.8 ± 10.1	25 25.8%	20 67.5%	8 25.8	1	8 25.8%	3.48	17 55%	14 45%
Total	116 100%	57 ± 11.6	32 27.6%	42 36.2%	51 43.9%	6	15 12.9%	3.64	61 52.6%	55 47.4%

Table 2- MI patient's data details in Al-Ramadi CCU for the year 2007.

Month	No
Jan	5
Feb	6

Mar	5
Apr	19
May	3
Jun	9
Jul	18
Aug	5
Sep	8
Oct	19
Nov	13
Dec	13

Table 3- Distribution of admission of MI cases in Al-Ramadi CCU for the year 2007

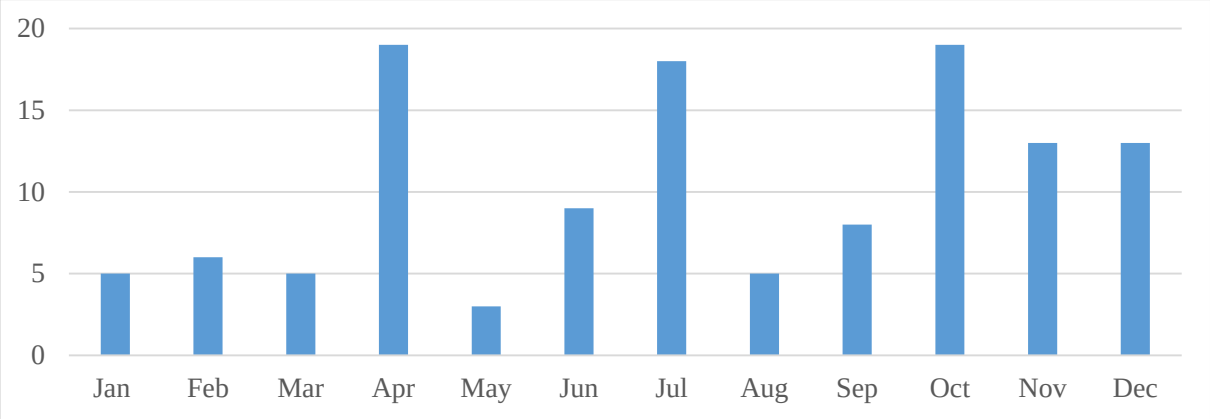

Diagram showing the distribution of M.I cases admitted to the C.C.U in the year 2007

Discussion

Documentation and statistical data of a health problem is the first step in its management. This study used the data documented by the CCU staff for the calendar year 2007 regarding the patients admitted to this unit with provisional diagnosis of acute myocardial infarction. This CCU serves a population of about 650000 people, so the incidence of MI in AI-Ramadi city is 13 per 100000 population for males and

4.7 per 100000 populations for females (P <0.05), according to this study, which was much lower than the incidence in other areas of the world.

The sex distribution of 73% of cases for males and 27% of cases for females (male to female ratio is 2.7). In Monica's project, the average incidence was 432 for males and 101 for females per 100000 populations (5), and it is 140.8 per 100

000 men and 20,4 per 100 000 women in the Perez et al. study (6), while the average annual incidence rate was 144.2 per 100000 inhabitants (185.7 in males and 104.2 in female population) in the Rancic *et al.* study (7). This difference in the incidence of our study from that in other areas of the world is thought to be due to inaccurate documentation and the death of the patient before arrival to CCU

Mean age of patients with MI in Al-ramadi CCU was 57+11.6 (60.8 for females and 55.65 for males, P< 0.05). In Vaccarino *et* al. study the mean age of the women was 72.4A12.0 years, whereas that of the men was 65.6-£13.1 years (8). It was 67+ l2 years for all in the large Blitz study (9), and in the kazemy *et* al. study, the women and men had mean ages of 65.62z10.56 years and 58.98z12.11 years, respectively (10). This variation in mean age in comparism with other world areas may be due to the mode of lifestyle, social stresses, and low medical services.

Nearly the incidence was equal from rural and urban areas in our 5tudy (P> 0.05), while in the Rancic *et al.* study, the affected urban population was 76.8%, three times greater as compared to the rural one (7). The explanation of this equality in the incidence of distribution between the rural and urban areas in our study is thought to be related to the similarity in the lifestyle and social circumstances between them.

72.4% have a risk factor from diabetes mellitus, hypertension, or smoking, and this risk factor was more in females (P<0.05). Prevalence of Diabetes mellitus was 28.2% and 25% in males and females, respectively (P <0.05), while in the kazemy study, the prevalence of diabetes mellitus was 17% in women and 9.8% in men (10).

Prevalence of hypertension in our study patients was 64.5% in females and 25.9% in males (P <0.05); in other studies, the prevalence of hypertension was 50% in women and 24.6% in men (10).

In our study, 50.9% of males and 25.5% of females were smokers (P <0.05), while in the kazemy *et al.* study, the prevalence of smoking was 13.7% in women and 36.3^{o}h» in men (10).

The average stay iii the CCU was 3.64 days; compared to other areas, it is about 4.5 days (11). Death occurs in 12.9% of patients studied (8% in males and 25% in females, (P<0.005). While it is 8.5% in the Blitz study (9), 18% in the Mahon *et* of study (12), it is 16.7% in females and 11.5% in males in Vaccarino *et al.* study (8), and it is 10.4 % in women, and 8.6 % in men in kazemy *et al.* study (10). Peak admission was seen in April, July, and October, and lowest in May, a pattern difficult to explain except inaccurate documentation. The numbers encountered in the CCU documents in our study appears to be out of reality and did not reflect the real situation of work in this CCU. Alteplase was used according to these records in six patients, while according to the pharmacology department in Al-Ramadi General Hospital documents, the

Alteplase vials number used in the CCU for the year 2007 was 196; inaccurate documentation is again a possible explanation of this difference. In addition, there was a wide variation from international compared data, as noted above.

Conclusion:

One can conclude the 1'oI1owings:-

The documentation system in Al-Ramadi General Hospital CCU was not accurate and, didn't reflect the real situation, and depends only on untrained personnel.

Computers were not used for documentation.

Admission diagnosis was used for documentation in the CCU and not the final or discharging diagnosis.

There was no full documentation for interventional procedure as DC shock or thrombolytic therapy.

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