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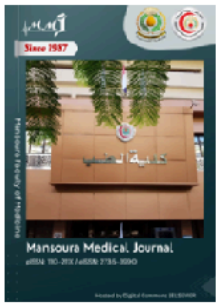

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ACUTE MYOCARDIAL INFARCTION CLINICO EPIDEM10LOGICAL STUDY

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INTRODUCTION

The medical records of all 58 patients admitted to the Royal Commission Medical Centre, formerly known as Al-Nawa Hospital with a confirmed diagnosis of acute myocardial infarction between November 1986 to November 1991 were retrospectively reviewed.

Despite the recently reported decline in the mortalty rates of coronary heart disease (CHD)(Goldman et al, 1984 and Beaglehole 1986), and the improved survival after acute myocardial infarction (AMI),(Gomez-Marin et al 1987), AMI remains a major cause of adult mortality and morbidity in North America and Western societies, and almost 35% of male deaths between the 5th and 6th decades of life is due to ischemic heart disease and coronary artery disease. Conversely, lower mortality rates from CHD have been noted In developing countries. However, immigration studies have shown that the incidence of CHD and its resultant mortality can rise with modernization of life-style (Marmot et al, 1984). Laurence et al (1985) have documented that lower-risk individuals of Asian origin exhibit an increased susceptibility and suffer worse CHD than do Asian remaining in their own countries.

During the past 2 decades of this century has showed great socio-economic progress with social and dietary habits resembling those from Western societies and therefore there has been a notable increase in

coronary artery disease. However, the epidemiological data are not sufficient concerning the actual prevalence of the disease and its risk factors,(Madkour et al,1985).

OBJECTIVES :

The main objectives of this retrospective study are:

1. To obtain the major contributory and risk factors res ponsible for coronary artery disease in Yanbu area.

2. To obtain a general baseline data of ischemic heart disease and CHD in the kingdom.

3. To point out the preventable and treatable factors to lessen the incidence of the disease.

MATERIAL AND METHODS

The medical records of all patients admitted to the Royal Commission Medical Centre between the period November 1986 to November 1991 were reviewed retrospectively. A confirmation of acute myocardial infarction was based on World Health Organization diagnostic criteria i.e.-the presence of 2 or more of the accepted 3 criteria - classical history, associated electrocardiographic (ECG) changes in serial studies and associated enzyme changes in the serial estimations. Data base included detailed history, clinical presentation, laboratory, electrocardiographic, echocardiographic and radiological data. Also included treatment given, course of the disease, complications if any, ancl subsequent follow up.

RESULTS

- Are illustrated in Tables 1, 2, 3, 4, 5, 6, 7.

DISCUSSION

No definite study has been done to actually find out the prevalence of ischemic heart disease (IHD) or coronary artery disease (CAD) in Saudi Arabia.

In our small but detailed retrospective study we noted that (Table I) almost 93% were males. This degree of male preponderance is slightly higher than that reported from industrialized

countries by Stewart et al,1988. However in our study it should be taken into consideration that over 60% of the affected population were expatriates considering the unique industrialization of our area.

Affected females were all Saudies and constituted about 6 . 996 of the whole group. The mean age of the Saudipatients was 57.5 (11.52) which was statistically highly significant from that of the non Saudi group 47 years (7.64). This is in accordance with results given by Karliner, et al (1987) in a WHO statistics which indicate that CHD occurs in males between the age of 45 and 54 years. Among the non Saudis (Table 2) there was a mixture of 13 national, British 6(17%), Bangladesh 5(14.2%) Filipinos 4(11.4%) Indians 4(11.4%) Sri Lanka 4(11.4%) Egyptians 3(8.6%) Pakistanis 2(5.7%) Lebanese 2(5.7%) and one each from Canada, Greek, Sudan, Somalia and Korea. The population in this industrial city is cosmopolitan and multinational and hence the above figures were expected and consistent.

It may be noted that the association of hyperlipidemia 47.8%, history of current smoking 39% diabetes mellitus 34.8% and hypertension were the main contributory factors in the Saudi population. This relatively high prevalence of smokers in our patients indicates the need for a more effective anti-smoking programme. In the United States, about 24% of the estimated decline In the mortality from ischemic heart disease was attributed to a reduction in cigarette smoking (Goldman et al, 1984). The prevalences of diabetes mellitus and hypertension were less than reported by Curry et al (1984) in black Americans with AMI, but higher than those found In white Americans. Hyperlipidemia also produces a major risk factor in the non-saudi group and it is attributed to the presence of good amounts of cholesterol oxides in their diet, not surprisingly 12 patlents of non Saudi group (35%) among them were used to alcohol intake.

It was found that anterior myocardial infarction (35%), followed by inferior myocardial infarction(26%) were

the most 2 common types (Table 5) in Saudi patients, while inferior myocardial infarction (45%), followed by anterior myocardlal infarction (20%) and (17%) presented with anterolateral myocardial infarction in Non Saudi group.

The MB fraction of creatine kinase provides an estimate of the AMI size and predicts early morbidity and mortality (Hindman et al,1986), also post AMI echocardiographic data are valuable in follow up. Unfortunately, the prognostic significance of these inexpensive, non invasive, and readily available method could not be tested in our retrospective analysis, because data were only available for very small number of patients.

The 8 (13.8%) in-hospital casefatality in all patients is comparable to result of about 10% reported by Gomez et al,(1987), and 17% reported by Sharpe et al (1983). Three progrnositic complications usually adversely affecting survival during the first hospitalization, these factors were cardiogenic shock, development of severe CHF, and cardiac arrest, occuring in 21.7%, 87% and 13% of the Saudi patients and occured in 8.8%, 11.4% and 14.3% of the non Saudi patients. This is in accordance with the conclusion of Karliner, et al (1987) who stated that cardiogenic shock and severe CHF are usually associated with poor outcome. On the other hand Gomez et al (1987) found that the presence of rales and third sound at the onset of AMI was associated with mortality rates up to 64%. Regarding cardiac arrest, the retrospective analysis did not reveal clear distinction between primary and secondary ventricular fibrillation as a cause of cardiac arrest. Volpi, et al (1987) reported that primary ventricular fibrillation carries twofold increase in the relative risk of cardiac arrest in cases of AMI.

A big majority of patients on both groups 96% and 97% received nitrates on admission, either orally or intravenous. It has been reported by Goldman et al (1984) that the use of nitrates accounted for 10% decline in CHD mortality. We tend not to use betablockers, by and large and hence

it was given only in one Saudi and 3 of the non Saudi patients.

However, the use of beta-adrenergic blocking agents was advised by the Norwegian group (1982) as potentiator to the effect of long acting nitrates. Calcium channel blocker was used in over 40% of both groups particularly in patients who were also known to have hypertension.

SUMMARY AND CONCLUSION

A retrospective study was undertaken of the medical records of 58 patients admitted to Al Nawa Hospital and Royal Commission Medical Centre during the period November 1986 to November 1991 and attempts were made to provide dataline base as regarding the incidence of acute myocardial infarction in ranbu area.

We analyzed the prevalence of known risk factors as smoking, the prevalence of major contributory factors like hyperlipidemia and the prevalence of associated diseases like diabetes mellitus, hypertenslon and previous ischemic heart disease. Eventhough new research has suggested genetic involvement in IHD, surprisingly in our study there was no documented family history of ischemic heart disease in any of our 23 Saudi patients, but 26% of the non Saudi group gave definite family history of ischemic heart disease. Of all the patients 8 (13.8) died in hospital from AMI related complicatlons e.g. cardiogenic shock, cardiac arrest and severe congestive heart failure. Over 30 month follow up, it was found that age over 60 years, severe CHF and non compliance to treatment were influencing long-term survival adversely.

We hope to compare our findings with other studies of similar achieve conducted elsewhere in the Kingdom, so that there will be a definite revealing of common risk factors, contributory factors, associated illness, so that the long term survival,land inhospital mortality can be favourably influenced in the future.

Table (1) : Patient Breakdown.

	Saudis Number	%	Non Saudis Number	%
Total	23	39.66	35	60.34
Males	19	82.6	35	100
Females	4	17.4	-	0
Age	Mean S. D. P. Sig.	57.48 11.52 0.05 Highly Sig.	Mean S. D.	47.09 7.64

Table (2) : Non Saudis Breakdown.

Nationality	British	Bangl.	Filipino	Indian	Srilank	Egyp-tian	Pakist	Leba-nese.	Cana-dian	Greek	Sudan	Soma-lia.	Korea.
Number	6	5	4	4	4	3	2	2	1	1	1	1	1
%	17.1	14.2	11.4	11.4	11.4	8.6	5.7	5.7	2.9	2.9	2.9	2.9	2.9

Table (3) : Distribution of Coronary heart disease risk factors :

	Saudis		Non Saudis	
	Number	%	Number	%
Family History	0	0	9	25.7
Smoking	9	39	15	42.8
D. M.	10	34.78	13	37.14
Hypertension	6	26	10	20
Hyperlipidemia	11	47.8	20	57.14
Alcohol abuse	0	0	12	34.28

Table (4) : Clinical Presentations :

	Saudis		Non Saudis	
	Number	%	Number	%
Symptomalogy : - Duration of pain in horus	mean S. D.	33.39 53.5	mean S. D.	12.42 20.78
- nausea and vomiting	Number %	10 43.5%	14 40%	
- Abd. pain and hyperacidity	Number %	3 13%	4 11.4%	
- Dizziness	Number %	3 13%	8 22.85%	
- Sweating	Number %	16 69.6%	26 74.3%	
- Dyspnea	Number %	6 26%	9 25.7%	
- S. B. P.	mean S. D.	131.7 21.49	129.57% 17.59	
- D. B. P.	mean S. D.	84.34 9.9	89 12.355	
- Pulse	mean S. D.	87.2 17.2	79.37 14.8	

Table (5) : Electrocardiographic pattern of infarction .

	Saudis		Non Saudis	
	Number	%	Number	%
Ac. inf. M. I.	6	26%	16	45.7%
Ant. M. I.	8	34.8%	7	20 %
Lat. M. I.	1	13%	1	2.9 %
Anterolat.	1	4.4%	6	17.1%
Anteroseptal	5	21.6%	5	14.3%

Table (6) : Comparison between Biochemistry and lipid profile in both groups.

	Saudis		Non Saudis	
	Mean	S. D.	Mean	S. D.
FBS	10.1	4.9	6.5	1.9
RBS	13.08	7.02	8.35	2.2
CPK	1375.3	1225.1	1180.3	1199.2
LDH	603.1	337.2	648.3	740.3
SGOT	229.3	214.2	193.4	188.3
Cholesterol	6.42	1.6	6.4	1.68
Triglycerides	2.39	0.82	2.66	1.22
HDL	0.93	0.2	1.02	0.25

Table (7) : Treatment given in I. C. U.

	Saudis		Non Saudis	
	Number	%	Number	%
Nitrates	22	95.7%	34	97%
Digoxin/Diuretics	13	56.6%	18	51.4%
Betablockers	1	4.3%	3	8.6%
Calcium Channel blockers	9	39%	16	45.7%
Antiplatelets	10	43.5%	7	20%
Heparine 5000 "U" / 8 hrs.	13	56.5%	20	57%
Heparine I. V./ 1000 u/m	1	4.3%	3	8.5%
Thrombolytic therapy	1	4.3%	2	5.7%
Antiarrythmic	4	17.4%	13	37%
Antihypertensives	1	4.3%	2	5.7%

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مراجعة دراسية لاحالات احتشاء عضلة القلب الحاد

الباحثون :

د/ فردوس عبدالفتاح رمضان د. محمد مطاوع

تم إجراء هذه الدراسة بمراجعة ٥٨ ملف لمرضى أدخلوا العناية المركزه فى الفترة مابين نوفمبر ١٩٨٦م، نوفمبر ١٩٩١م، وشخصت حالاتهم على أنها احتشاء حاد مؤكد فى عضلة القلب، كان إجمالى عدد الذكور ٥٤ سنة بنسبة (٩٣٪) وعدد الإناث ٤ (٩ر٦٪) شكل السعوديين ٣٣ مريضاً وغير سعوديين ٣٥ مريضاً. وكان متوسط عمر المرضى السعوديين ٥ر٥٧ (٥ر١١) عاماً. وكان متوسط عمر غير السعوديين ١٤٧ (٦ر٧) عاماً. كانت أكثر عوامل التعرض التى صادفتها هو اختلال نسبة الدهون فى الدم بنسبة ٨ر٤٧٪ بالنسبة للسعوديين ١٤ر٥٧٪ لغير السعوديين وكذلك داء السكرى والتدخين وارتفاع ضغط الدم على التوالى.

توفى فى المستشفى عدد ٨ مرضى بنسبة (٨ر١٣٪) من جميع المرضى بسبب مضاعفات ذات علاقة بالاحتشاء الحاد فى عضلة القلب مثل الصدمة القلبية، وتوقف القلب وحدوث هبوط القلب الاختفائى الشديد. وكذلك تمت متابعة ٢٠ مريضاً سعودياً، ١٨ مريضاً غير سعودياً لمدة تزيد على ٣٠ شهر وقد وجدنا أن المرضى الذين يزيد عمرهم على ٦٠ عاماً والغير ملتزمين بتناول عقار النيترات طويل المفعول وكذلك حدوث قصور القلب الاحتقانى. جميعها من العوامل التى لها تأثير سلبى على حياة المريض. وقد دلت معلومات الدراسة على وجوب مكافحة التدخين والرعاية الطبية المنظمة لمرضى داء السكرى وارتفاع ضغط الدم لأنها جميعها من العوامل التى تساعد على حدوث الاحتشاء فى عضلة القلب.