Knowledge about coronary artery disease among patients admitted to Aseer central hospital with acute coronary syndrome

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Summary

Background: **Coronary Artery Disease is a major killer worldwide. Level of education about this important health problem is unknown in our local population.**

Methods: **A pre-tested questionnaire was used to identify the level of education about CAD in all consecutive patients admitted to Aseer Central Hospital with the diagnosis of Acute coronary syndrome for the period (Jan. 2000 – Feb. 2001).**

Results: **We found the level of knowledge in the majority of patients was poor, the older and the less educated patients had a lower level of knowledge. The patients showed improved level of knowledge during their stay in the hospital.**

Conclusion: **Our cardiac patients have poor knowledge about their disease and improvement on this level of education is needed.**

Keywords: *Coronary artery disease, Knowledge, Acute coronary syndrome.*

Résumé

Introduction: La maladie d'artère coronaire est une maladie meurtère grave partout dans le monde entire. Le niveau de l'education sur le probleme important de la santé est inconnu dans notre population locale.

Méthodes: Un questionnaire pré-teste était utilisé pour identifier le niveau de l'education sur CAD chez tous les patients consecutivement admi a l'Hôpital Central d'Aseer avec le diagnostic d'un syndrome coronaire aigu pendant la période (janvier 2000 au fevrier 2001).

Resultats: On a remarqué que le niveau de la prise de concience chez la majorité des patients était mauvaise, les plus agés et les patients moins lettrés avaient un niveau très bas de connaissance.

Les patients ont manifesté une amélioration dans le niveau de connaissance au cours de leur sejours dans l'hopital.

Conclusion: Nos patients atteints de cardiaque ont une mauvaise connaissance sur leur maladie et on a besoin d'une amélioration de ce niveau d'education.

Introduction

Coronary artery disease continues to be a major public health problem worldwide. In the United States nearly 1.5 million patients annually suffer from acute myocardial infarction (about one patient every 20 seconds)[1]. Level of knowledge and education about coronary artery disease may play a role in both prevention and treatment of this devastating problem. Other researchers in developed countries found people in categories at greater risk of cardiovascular disease, are less able to recall important cardiovascular risk factor[2]. In our study we tried to shed some light on the level of knowledge about coronary artery disease among patients admitted to Aseer Central Hospital with the diagnosis of acute coronary syndrome, to find out possible predictors for this level of knowledge, and finally to evaluate improvement in the level of knowledge among the patients during their hospital stay.

Monitoring knowledge of the population about CAD can help guide public health program, although knowledge alone is insufficient it is thought to be a pre-requisite for making sound decision about health[3,4].

Material and Methods

Aseer region (population of 1,200,000) is located in the southwest of Saudi Arabia covering an area of more than 80,000 km^2. Secondary care services in the region are provided through a network of 15 hospitals scattered all over the region. Tertiary care services are provided by the Aseer Central Hospital (Al-Shehri et al, 1996)[5].

A structured pre-tested questionnaire was developed containing 25 items (Table 1), covering different areas regarding knowledge of coronary artery disease and its risk factors, perception about different modalities of treatment, dietary factors, and clinical situation in which the patient should seek medical attention. Content validity was established by a five-member jury of cardiac experts. The form was pilot tested and necessary modifications were performed. The questionnaire included also demographic data of the patients such as age, sex, education, nationality, residence; history of known risk factors, and admission diagnosis.

All consecutive patients admitted to the Coronary Care Unit of Aseer Central Hospital with the diagnosis of acute coronary syndrome for 14 consecutive months (January 2000 through February 2001) were included in the present study.

The questionnaire interview was performed by two expert bilingual interviewers in Arabic and English languages. The interview was conducted by the same interviewer on admission and on discharge from the hospital.

Data were coded, validated and analyzed using SPSS PC+ software package. Each of the 25 knowledge questions was rated using a score of one for correct answer and zero for a false answer (a total score ranging from 0 to 25). Patients having a score above 75th percentile, the upper quartile (a computed score

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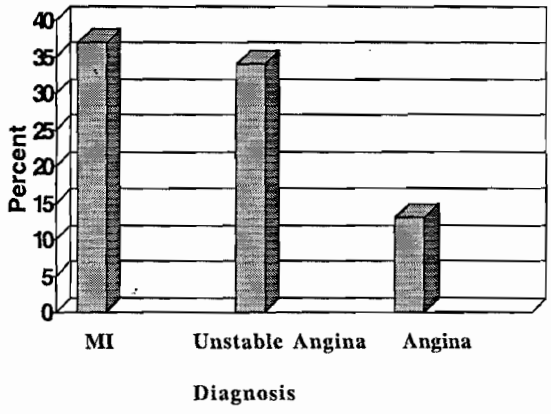

Fig. 1 *The most frequent diagnoses*

of ≥20) were regarded as having a good level of knowledge. Univariate analysis methods were used. Student's "t", paired "t", Fisher's Exact test and chi square tests were used as tests of significance at 5% level. Whenever and wherever suitable the crude odds ratio (cOR) and antecedent 95% confidence intervals (95% CI) were used. Multivariate logistic regression analysis was performed to study the associate between some potential risk factors with low knowledge. Maximum likelihood estimates of combined odds ratios (OR) and their antecedent 95% confidence intervals (95% CI) adjusted for confounders were obtained by using multiple logistic regressions.

Results

Study Population

The present study included 98 persons (81 males and 17 females). Their age ranged from 30 to 90 years with an average of 57.1± 12.8 years and a median of 56 years. Elderly (60± years) represented 43.9% of the study population. No statistical significant difference (t=0.85, P=0.933) was found between both sexes regarding age (57.1±12.9 years for males and 56.9±12.6 years for females).

Forty-eight percent of cases were illiterate. The majority of cases (75.5%) were Saudis and living in urban areas of Saudi Arabia (57.1%). Illiteracy rate among females (38.2%) was significantly (X^2=13.4, P<0.05) higher compared to males (39.5%).

Figure (1) shows that the most frequent admission diagnoses were myocardial infarction, unstable angina and angina in order of frequency.

Known diabetics represented 44.9% while 47.6% were known hypertensive. Hyperlipidemia was prevalent in 16.3% of cases. Past history of coronary artery disease was found in 28.6% while family history of ischemic heart disease was found in 16.3% of cases. No statistical significant differences were found between both sexes regarding past and family history of ischemic heart disease. On the other hand, almost half of the males (46.9%) were smokers compared to none among the females. The difference was statistically significant (Fisher's Exact 2 tailed P<0.05).

Knowledge of coronary artery disease on admission

The study showed that the knowledge score ranged from 1 to 25 with an average of 16.6±9 and a median of 17. Patients having a score above 75th percentile, the upper quartile (a score of ≥20) were regarded as having a good level of knowledge. The frequency of those having a good knowledge on admission amounted to 29.6%.

The proportion of elderly people (60+years) having low knowledge, a score of less than 20 (90.7%) was higher compared to those aged less than 60 years (54.4%). The study showed that elderly people (60+years) had significantly higher risk to have low knowledge compared to those aged less than 60 years (cOR=8.1, 95% CI=2.5-25.9).

(Table 2), shows univariate analysis of other potential risk factors determining low knowledge of coronary artery disease

Table 1 Items included in the pre-tested questionnaire.

Hypertension is a risk factor for CAD.
There are many types of cholesterol and one of them protects against ischemic heart disease.
Height is a risk factor for CAD.
Diabetes is a risk factor for CAD.
After the development of myocardial infarction, no need for long-term medications.
Smoking is a risk factor for CAD.
Aspirin is a good drug that can protect against ischemic heart disease.
CAD can run in families.
CAD caused by sunstroke.
The coronary artery narrowing can be caused by lipid accumulation.
The type of food has no relation to CAD.
If you have chest pain you should report to hospital ASAP.
CAD is not a significant problem in Saudi population now.
The chest pain that increases with exercise is more suggestive of heart problem.
CAD is caused by coronary artery problem, valve problem or muscle problem?
People with more active life style are subjects to CAD less than people with sedentary life style.
Hypertensive patient should increase their salt intake to lower the blood pressure.
Fish is a good meal for patient with CAD.
After taking off the fat from the red meat, the red meat itself doesn't have cholesterol in it.
Animal oil and planet oil have the same type of cholesterol, which is harmful to the heart.
Second hand smoking is not a risk factor for CAD.
If CAD is treated with balloon or bypass surgery, the patient is cured and no need for dietary therapy after.
After M.I. the patient will and should have no excertional activity for the rest of his life.

Table 2 Univariate analysis of potential risk factors determining low knowledge among the study population.

Variable	cOR	95% CI	
		Upper	Lower
Age: Elderly (60+) vs. age less than 60	8.1*	2.5	25.9
Sex: Females vs. males	3.8	0.8	17.6
Education: Illiterate vs. educated	56*	7.1	437
Nationality: Saudi vs. Non Saudi	2.6*	1.1	6.9
Residence: Rural vs. Urban	2.5	0.9	6.5
Diagnosis: MI vs. Angina	1.2	0.5	3.1
Non Smokers vs. Smokers	0.5	0.2	1.3
Non Diabetics vs. Diabetics	**0.8**	**0.3**	**1.9**
Non Hypertensive vs. Hypertensive	1.2	0.4	3.4
No history of CAD vs. CAD history	0.9	0.3	2.1
Non Hyperlipidemia vs. Having Hyperlipidemia	0.4	0.1	1.4
No Family history of CAD vs. Having Family history of CAD	0.3	0.1	1.1

* *Significant*

Table 3 Multivariate analysis, adjusted odds ratio and antecedent 95% CI of potential risk factors determining low knowledge in the study population.

Variable	aOR	95% CI	
		Upper	Lower
Age: Elderly (60+) vs. age less than 60	13.673*	1.826	102.4
Sex: Females vs. males	0.583	0.029	14.931
Education: Illiterate vs. educated	71.324*	5.408	940.7
Nationality: Saudi vs. Non Saudi	1.326	0.264	6.677
Residence: Rural vs. Urban	2.234	0.492	10.153
Diagnosis: MI vs. Angina	1.574	0.344	7.208
Non Smokers vs. Smokers	1.849	0.452	7.568
Non Diabetics vs. Diabetics	**0.364**	**0.749**	**1.769**
Non Hypertensive vs. Hypertensive	3.162	0.549	18.195
No history of CAD vs. Having CAD history	0.149	0.197	1.123
Non Hyperlipidemia vs. Having Hyperlipidemia	1.172	0.209	6.541
No Family history of CAD vs. Having Family history of CAD	1.810	0.287	11.434

* *Significant*

in the study population. Similarly, illiterates were found to have higher risks to have low knowledge compared to educated (cOR=56, 95% CI=7.1-437). The table also shows that Saudi nationals have significantly higher risk to have low knowledge (cOR=2.6, 95% CI=1.1-6.9).

After adjusting all risk factors to each other in a multivariate logistic regression model (table 3), the following risk factors were found to be significantly associated with the presence of low knowledge of coronary artery disease visa : age over 60 years (aOR=13.673, 95% CI=1.826-102.4) and illiteracy (aOR=71.324, 95% CI=5.408-940.7).

Effect of stay in ICU on knowledge of coronary artery disease

The study showed that the average admission score (16.6±4.9) increased after stay in the ICU to reach 18.5+4.6. The difference was statistically significant (paired t=9.07, P<0.05).

Discussion

Two features of these results are most important. First, the level of knowledge in the majority of patient was poor and unsatisfactory. Second, older and less educated patients had lower level of knowledge. The level of education beside age were a major predictors as expected, while other factors like gender, nationality, presence or absence of atherosclerosis risk factor as well as whether the patient is known to have coronary artery diseases or not didn't predict the level of knowledge.

The patients during their CCU stay improved their level of knowledge as expected, presumably from being in the hospital environment, and from the education that they received from the treating team.

The overall level of knowledge was poor probably reflecting the inadequacy of education we offer to our patients. Utilizing different media channels will likely help in improving that level of knowledge. Also, a continuous education to our patients in the hospital remains to be an effective way.

Knowledge deficiency about ischemic heart disease symptoms is a global concern; it was found that knowledge of the complex constellation of heart attack symptoms (excluding chest pain) to be deficient in the US population, especially in low socioeconomic and racial or ethnic minority group[6].

Utilizing different media channels to educate public about heart disease in general and ischemic heart disease in particular

will help in the management of this important health problem, the effort need not to be of large magnitude, e.g. two to three hours of systematic education was found to improve heart failure patients', knowledge on essential issues[7].

An education campaign should be initiated and should focus on elderly illiterate patients and their relatives.

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