

Anxiety , Depression and Risk Factors in post- coronary Artery Bypass patients "

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Coronary heart disease is the major cause of death in the whole world and in The Kingdom of Saudi Arabia. This study provides results from patients who had undergone coronary artery bypass graft surgery at King Fahd Armed Forces Hospital. The purpose of this study was to examine the effects of regular advice manage patients' health care, self perception, lifestyle and psychological at home. Thirty subjects were studied between hospitalization phase and two weeks after being discharged from the hospital. Hospital anxiety and depression scale and risk factors were measured at baseline and following two week post-discharge. Regarding the psychological effect, blood pressure, cholesterol, diabetes and active lifestyle no significant differences were observed in the subjects. However, three subjects smoked again after hospital discharge. In conclusion, risk factors and high level of anxiety and depression appeared to be predictors of postoperative outcome and can increase patients' emotional distress, medical and economic costs.

KEYWORDS:

- Coronary Heart Disease (CHD).
- Coronary Arteries Disease (CAD).
- Coronary Artery Bypass Graft surgery (CABG)
- Quality of Life (QoL)
- Hospital Anxiety and Depression Scale HASD.
- (CR).

INTRODUCTION

Coronary Heart Disease (CHD) is the most common cause of fatalities in the world (Yusuf, Reddy, Ounpuu & Anand, 2001). Coronary Arteries Disease (CAD) is not prevalent among either young males or females. It becomes increasingly so among younger females following menopause, as they lost the protective benefit which normal estrogen levels confer in development of ischemic heart disease (American Heart Association (AHA), 2001). Although younger males between 35 to 44 years old experience morbidity from CAD more than six times the rate of females (AHA, 2001). The rate in females begins to increase after menopause and rise steadily until after the age of 75 years old, when the rates of morbidity and mortality from CAD, in males and females are approximately equal.

After decades of clinical and statistical research, scientists have identified a group of risk factors for heart disease. These risk factors are aspect of personal lifestyle or behaviour, inherited characteristic or environmental exposure, which on the basis of epidemiological evidence is known to be associated with health related conditions considered to be important to prevent (American College of Sports Medicine (ACSM), (2000). Furthermore, these risk factors have been grouped into two classifications by Lindsay and Gaw (1997), modifiable risk factors (e.g. Smoking, high cholesterol, high blood pressure, diabetes, being overweight and sedentary lifestyle) and non-modifiable risk factors (e.g. gender, age and family history).

Coronary Artery Bypass Graft surgery (CABG) is usually successful in relieving angina, however, psychological adjustment to this surgical procedure is often disappointing (Bengtsson, Hagman & Wedel, 2001). Patients are at high rates of psychological morbidity, emotional, social or cognitive adverse effects while, before and after CABG. In addition, poor health-related Quality of Life (QoL) is associated with increased mortality even when other factors such as depression and anxiety are controlled. Therefore, recovery from CABG is a complex process which may significantly impact the patient's QoL. The resumption of vocational, sexual activity and social, successful modification of risk factors associated with CAD, physical healing and psychological function are the factors considered when evaluating recovery outcomes for post-CABG patients (Natalie, et al., 2007). Studies have documented increased level of anxiety and depression (Eagle, et

... l., 1999) and decreased level of QoL (Bengtsson, Hagman & Wedel, 2001) following CABG.

Patients who undergoing CABG get a stressful experience either before or after surgery (Duits, et al., 2002; Halpin & Barnett, 2005). The stress of waiting for surgery is followed by the threat of the surgical procedure itself. Pre-CABG anxiety mainly concerns the illness itself, anesthesia, surgical procedures and thought relating to the period after surgery (Duits, et al., 2002; Halpin & Barnett, 2005), however, post-CABG anxiety mainly involves concerns about returning to normal life and physical activities (Mutwalli, H., thesis). While anxiety dominates CABG, feelings of depression are more common in the early weeks after surgery (Mutwalli, H., thesis). In post-CABG patients, depression has been associated with an increased risk of morbidity and mortality (Carney & Reedland, 2003; Lett, et al., 2004) and future cardiac events (Bush, Ziegelstein & Tayback, 2001). Depression is frequently encountered in patients who underwent CABG (Eagle, et al., 1999).

Most hospital discharge programmes in KSA are based on medication knowledge and some advices on active life. However, it believes that regular hospital advice will not help post-CABG patients to improve their recover before hospital discharge. The aim of this study is to examine the effect of regular advice manage patients' health care, self perception, lifestyle and psychological at home.

HOSPITAL PROGRAM FOR PATIENT ADMISSION IN HOSPITAL
Patient Must Follow Steps To Be Admitted In Hospital Diagnosis Of Patient Is Done **IN ONE**

OF FOLLOWING DEPARTMENT :

EMERGENCY DEPARTMENT .

Cardiothoracic Surgery Clinic Which Held Only In Tuesday Per Week .

Cases Which Admitted To Department Through Recommendation Of One Shift Of

DEPARTMENT .

After Patient Admission Essential Investigation Is Done Which Must Include

CBC Complete Blood Count .

Lipid Profile (Include LDL , HDL , TGA & Cholesterol Level)

Coronary Angiography → Which Is Special Type Of Imaging Include Injection Of Dye
inside Coronaries Of The Heart & Detecting Whatever It ,s Occluded Or Patent .

Revol & Liver Function Tests .

Random Blood Sugar .

So According To The Result We Can Decide Patient Needs For Operation Or Not .

If Patient Needs Surgery He Admitted To Hospital , Where The Suitable Time Is Chosen , If
Patient Has Any Revel , Liver Or Other Problem , He ,s Receive Suitable TTL Until Time Of
Operation .

After Operation Patient Is Admitted In ICU For At Least 3 Days Until He Reach Stable State
Then He Admitted To Department Again For At Least One Week , This Time Is Depend On Scranty
Of Surgery Age Of Patient & Its Immunity Degree .

After Patient Discharge He Has Consultation Every 15 Days For 2 Months Then Every
Month For 4 Month .

Patient Usually Do Coronaries Angiography One Time Per Year & Follow General
Recommendation For Change His Life Style .

MATERIALS AND METHOD

SUBJECTS

Patients who were routinely admitted to the Cardiology/Cardiac Surgery Department at King Fahd Armed Forces Hospital for CABG were invited to participate in the study. Subjects were eligible for inclusion if they were 45 years or older, underwent CABG, had an ability to understand and answer the questionnaires and were able to regularly attend the study programme. The final cohort of 30 patients (29 males and 1 female) were randomly allocated in this study.

In this study, 40 patients agreed to participate. Ten patients left this study as four did not wish to complete the questionnaires, while the rest were unreachable for follow up, creating a final study group of thirty subjects.

Sample Which Chosed For This Research From King Fahd Armed Forces Hospital Was Small In No: Due To Following Causes .

- 1 - Difficulty Of Operations Which Limits Its No: In Some Centrs Of In This Hospital .
- 2 - Small No: Of Individual Who Co-Operative In This Research .

Each subject was asked to complete the pre-test, received regular advice from their doctors and followed hospital instructions at the hospital. Two weeks after being discharged from the hospital, subjects were contacted and followed-up in the hospital. all subjects completed the pre- and post-test, namely the Hospital Anxiety and Depression Scale questionnaires and were asked to complete the risk factors questions.

OUTCOME VARIABLES:

Psychological effects were measured by the Hospital Anxiety and Depression Scale (HADS). The HADS contains 14 items questionnaires that includes 7 questions to measure anxiety (HADS-A) and 7 questions to measure depression (HADS-D) (Zigmond and Snaith, 1983). For each group of 7 items, subjects were provided with a four-option scale (scored 3-0) and asked to choose one that most closely represents their feeling such as 3 = extensive experience with situation to 0 = no experience with situation, with 6 reversed items. The two subscales have been found to be independent measures and responses relate to feelings in the past week only. In its current form the HADS is now divided

nto: normal case (0-7), borderline case (8-10), and definite case for both anxiety and depression (11 or above).

The HADS were provided to the subjects in Arabic and were translated into Arabic by use of the Arabic version (copy) from the HADS website, and some changes from the investigators, which included forward and backward translation by qualified individuals.

Active lifestyle was measured by asking the subjects to indicate the frequency with which they engaged in three levels of exercise: rigorous (e.g. athletics), moderate (e.g. jogging) or light (e.g. walking), and how many times per week.

Smoking was measured by asking the subjects, are you smoker, ex-smoker or non-smoker?

Blood pressure, cholesterol and diabetes were reported by the hospitals' patients file.

RESULTS

The independent variables of interest for data analysis were: age, height, weight, HADS and modifiable risk factors. A paired samples t-test was used to investigate any differences between hospitalization phase and two weeks after being discharged from the hospital on each of the independent variables. Data is presented as means, + SD and α -level of 0.05 was used for all analysis. All statistical analysis was undertaken using SPSS software, version 13.

Table 1. Characteristics of the subjects according to age, height, and weight
(mean \pm SD) for post-CABG patients.

Measure	Subjects (n=30)
Age (Years)	63 \pm 10
Height(cm)	167 \pm 6
Weight(kg)	76 \pm 9

(value of $p < 0.05$); kg= kilograms; cm=centimeters.

Table 1 summarizes the subject characteristics, illustrating that the mean \pm standard deviation

for the subjects at the age, height and weight were 63 ± 10 , 167 ± 6 and 76 ± 9 respectively.

Table 2. Pre- and post-test results for HADS for post-CABG patients (means \pm SD)

Subjects	After surgery	Before surgery	p value
HADS-A	10 ± 3	10 ± 3	0.799
HADS-D	9 ± 2	10 ± 3	0.286

HADS-A, Hospital Anxiety and Depression Scale (Anxiety Component); HADS-D, Hospital Anxiety and Depression Scale (Depression Component).

Table 2 further illustrates the highly no significant improvements in the HADS for the anxiety or depression scores ($p=0.799$ and $p=0.286$ respectively) from pre-test to post-test following the 2-week.

Table 3. The modifiable risk factors of the sample according to smoking, blood pressure, cholesterol, diabetes and physical activity for the subjects.

Measure	Subjects (n=30)
Ex-Smokers	17
Hypertension	16
Cholesterol	25
Diabetic	20
Physical Active	1

In Table 3 We Listed Risk Factors CHD Which Known In Sample Of Research , It Include Following Main Point .

EX – Smokers Before Time Of Operation Was 17 , Exactly Eleven Stop Smoking 1 Month Before Operation , 3 Individuals Quite Smoking 1 Day Before Operation Also 16 Case Were Suffering Of Uncontrolled Hypertension , While 20 Cases Has Uncontrolled Diobdy Mellity .

25 Person Suffering From Improper Metabolism Of Cholesterol , While 1 Only Of Sample

Was Practice Physical Activity .

According To Medical Point Of View Risk Factor Which Cause CHD Are Classified Into :

Risk Factors For Which Interventions Have Proved To Lower Risk Of CHD As \uparrow LDL , \downarrow HDL , Athergenic Diet , Smoking , Hypertension .

Risk Factors Which Interventions Are Likely To Lower Risk Of CHD As DM , Obesity & Physical Inactivity .

Risk Factors Which Intervention Might Lower Risk Of CHD As Psychological Factors , Alcohol , Okidative Stress & Homocystine .

Lastly , Risk Factors Which Can't Be Modified , As Age , Male Gender , Low Socioeconmie State & Family History Of CHD .

Patient Follow Up After CABG :

The Late Outcomes After CABG Are Related To Age , Seventy Of Cardiac Disease Before Operation , Non Cardiac Condition Progress Of Athroschogy & The Operation Itself

Many Of This Factor Can Be Inflowred By Treatment Of Choices .

Patient After Have Prolonged Survival After CABG , More Than 80 % Of Patient Are Alive More Than 10 Years After Operation , Over The Long Term , Control Of Progression Of Atherosclorsis By Life Style Modifications & Phormocological TTL Which Include

TTL Of Hypertension .

Lipid Metobotism Control .

Platlets Inhibators .

It's Seems To Extend The Benefits Of CABG .

So We Must Make Modification For Patient Life Style Include Following :

1 - Diet

Non Athenogenic Diet Which Include :

Diet To Maintain Ideal BW Fat $<$ 30 %

Saturated FAT $<$ 7%

Cholesterol < 200 Mg Idl

Use Monosaturated & Omega 3 FA (Fish)

2 – Physical Activity

Exercise Procerphon According To Patient Characterzes As Follow

Chactersties	Type Of Exercise	No Of Week	Dwrahire Of Each Session
Age < 65 Years + Not Over Weight	Walking , Jogging , Cycling , Rowing	3 / 4	30 – 40 Minutes Continuous Or Interval
Age > 65 Years + Not Over Weight	Walking , Cycling , Rowing	3 / 4	30 Minutes Interval
Overweight	Walking	5 / 6	45 – 60 Minutes
Age > 65 Years + Disabled Or Over Weight	Weight Machine & Dumbbells With Focus On Upper Limb Shoulder & Arms	2 / 3	10 – 20 (10 Repetition For 5 -7 Exercise)

In Patient Who Not Old In Age & Has No Overweight As In Cases Of Familial Hyperlipidemia Patient Not In Need To Exercise Program Only Need Aggressive Lipid Lowering Drag Program .

3 – Smoking Cassation

- 50 % Reduction In Cardiovascular Events With In 2 -4 Years .
- Up To 20 Years Regain Baseline Risk .

4- D M Control

This Happened Through

- Weight Reduction - Exercise - Avoid Sugar & Saturated F A
- Near Normal Fashing Glucose & HBAIC < 6.5 – 7 %

5 – Obesity Control

↓ Body Weight 10 % From Baseline In 6 Month .

6 – Family History Of CHD

- Powerful Screening Of Risk Factor .

All This Factors + Proper & Adjusted Pharmological TTL Is So Important .

Smoking ↑ Ryk Thrize

Aggrisve Lipid Lowering Drug Is Needed To ↓ Lipid Less Than 5.0 MM OL/L

Antiplott TTL (Ospinum 75 – 150 Ld)

(Clopidogrel 75 Mg / L)

Discussion

Subjects who have undergone CABG for the first time have higher information needs. Numerous studies reported that post-CABG patients desired information about symptom management, medications, treatment, recovery time, lifestyle modification, activities and sexual activity (Natalie, et al., 2007; Kattainen, Merilainene & Sintonene, 2006; Heart and Stroke Foundation of Canada, 2003; Dusseldorp, et al., 1999).

Heijmeriks, et al. (1999) and Langeluddecke, (1989) reported that assessing patients after a successful CABG, approximately 40% of the patients experienced anxiety and depression during the post-surgery period. In one study, more anxiety and depression in post-CABG patients during hospitalization and six weeks post-event was related to a decreased likelihood of returning to normal life (Maeland & Havik, 1987). In this study, the subjects did not show differences between pre- and post-test. Subjects were at the borderline case score and they showed no change in the anxiety score (9.50 ± 3.31 and 9.63 ± 2.80 respectively), however, there was a slight increase in the depression score (9.19 ± 1.80 and 9.75 ± 2.70 respectively). One of the clear differences was evident in the patient's levels of anxiety and depressive symptomatology. This finding is also consistent with the fact that rates of anxiety and depression are high for patients who did not attend cardiac rehabilitation programme (Underwood et al. 1993).

It has established that blood pressure and diabetic elevation is a common and powerful contributor to all of the major cardiovascular disease which involving CAD either in post-CABG patients or non-CABG patients (MacMahon, S., Peto, R. & Cutler, J., 1990). According to Herlitz,

Brandrup-Wongnsen and Haglid (1996) found that early morbidity and mortality for post-CABG patients were found between the first 30-day and 2-year hospital discharge. In this study, most of the subjects were suffering from high blood pressure and diabetic with no significant changes between pre- and post-test. Moreover, hypertension and diabetic measurements were extracted from chart review. This one time measurement might be not representative of the patients' usual daily measure in the periods prior to their CABG, which could not ascertain this measurement, were done in standardized fashion the way it was performed on two weeks hospital discharge.

Despite the post-CABG patients are enthusiastic to reduce the risk factors. All the smoker subjects had quitted smoking before the hospital admission. Two weeks hospital discharge, three subjects smoked again. However, the short-term study does not prove while the rest of the subjects who smoked, will return back to this habit after long-term. According to FitzGibbon, et al., (1987) reported that after 5 years follow-up of 340 post-CABG patients, 115 patients were smokers and 225 were non-smokers. It found that post-CABG patients who smoked after the surgery had a greater risk than patients who stopped smoking.

The present study did not conduct a full dietary analysis. It found a decrease pattern of results, as the subjects showed some evidence of reductions in high-fat or calorie foods. In addition, dietary has been changed following CABG than previously with the exception of decreased consumption of red meat, the pattern of dietary change seems to be one of the ways to avoid the risk, rather than the positive adoption of a healthy diet. However, most of the subjects still suffer from high level of cholesterol with no significant changes between both tests.

It found that subjects would not like to change their active life and would like to stay in bed most of time. They thought that movements were very difficult for their condition and might make their life worse. The finding of active life following CABG suggests that the majority of subjects did not understand the benefits of exercise following CABG and engaged in at least some degree of appropriate types of exercise. The results also suggest that a majority of patients should change their lifestyle following CABG, and indicate the acceptance of active life. Mutwalli, et al., (2008) reported that patients who underwent CABG and were instructed in Cardiac Rehabilitation (CR) and daily physical activities, changed from a non-significant difference at baseline to a significantly lower

anxiety and depression level and also better physical activity during hospital stay and-after hospital discharge, compared with patients who did not enroll in the CR programme.

Savage, Brochu, Poehlman and Ades (2003) studied the effect of four months CR programme on Fifteen overweight patients with CHD. Consecutive patients' body composition and body fat distribution were measured before and after the rehabilitation programme. They found that patients had reductions in total body weight, fat mass, percent body fat and waist circumference ($p < 0.001$). Also, there were positive changes in the lipid-metabolic profile with reductions in triglyceride levels, HDL, and fasting insulin levels ($p < 0.001$). Moreover, Engblom, et al., (1997) studied the effect of long-term CR on patients undergoing elective CABG. Patients were randomly allocated to either a treatment or a control group ($n = 119$ and 109 , respectively). In five years follow-up, no change in BP, hyperlipidemic medication was used by 25% & 26% and smoking was 16% & 15% in treatment and control group, respectively. However, other study focused on the effect of exercise training alone, without modification of dietary intake on 82 patients with CAD (Brochu, et al., 2000). Patients experienced a significant overall improvement in total cholesterol, HDL, LDL, triglycerides and glucose level after three months exercise training. Medical therapy, education and exercise training programme in the CR setting resulted in relatively modest risk factor improvements in CAD patients.

Cardiac rehabilitation programme for CAD survivors showed a significant improvement in terms of physical function and QoL following CABG, compared to more conventional programmes that already exist in KSA. The primary objective of the CR is a comprehensive programme consisting of the monitored exercise, health education and support. It helps people who are recovering from experiencing heart problems to return to an active life. The American Heart Association (2001) describes CR as "the coordinated, multifaceted interventions designed to optimize a cardiac patients' physical, psychological, and social functioning". The goal of CR is to provide an intervention for each of the modifiable risk factors in order to ultimately minimize patients' morbidity and mortality. Cardiac rehabilitation plays a crucial role in delivering preventive care in CAD patients and potential CAD patients. Smart & Marwick (2004) reported that there is a trend towards increased survival associated with health, as well as a reduction in the symptoms that commonly plague CAD patients, and also it improves short-term recovery to promote long-term change in lifestyle after CR.

programme. It is important to note that CR helps to reduce the surviving patient's risk of subsequent cardiac problems and to promote their return to a normal life.

It's believed that CAD patients and adults should exercise, diet, stop smoking and make other lifestyle modifications to have a healthy life without any risk factors. If CAD patient survivors do not follow such a lifestyle, it is seemingly almost impossible for them to work and follow a normal life without the presence of the risk factors. Therefore, this study strongly recommends that it is the time to start running cardiac rehabilitation service as a solution to the problems, with the aim of improving patient's needs such as physical function, QoL, psychological effects and risk factors.

Why There's Difference Between In Results Of This Research & Other Researches ?

This Is Due To Following Causes :

1 - The Cass Which Included In The Research Are Different , Change In Culture & Psychological Aspects Between Arabion Patients & Foreigners Make Change In Results , Arabian patient Not Easily Give Off Of Smoking Or Change Their Life Style , While Foreigners Patients Can Make That Easily .

2 - In Europe & America There's Centers Which Responsible For Cardic Rehabilitation Which Advice Patient Pre & Past Surgery While In Arabian Country It Not Present .

3 - There's General Knowledge Between Individuals In Foreign Countries About Importance Of Research So You Can Have A big Sample Size & Easily Obtain Knowledge From Patient , This Is Not Available In Arabian Countries .

4 - This Research Focus Mainly About Anxiety & Depression Not All Risk Factors Or Risk factors Which Discussed Before In Other Research So The Result Is Different .

5 - Lastly Small Size Of Sample May Lead To Change The Result .

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