Reduction of Risk Factors following Lifestyle Modification Programe in Patients with Coronary Heart Disease

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Abstract: *This study was conducted to the effect of a teaching program on patients with myocardial infarction by modification of risk fartors or behavior changes: 100 patients out of those who admitted to the CCU ward of Shahyd Madani Heart Hospital from January to September, 2004 were assigned to a teaching group and 50 to a control group. An individualized teaching program was delivered to the teaching group during the hospitalization period. It covered aspects such as: the characteristics of heart disease, the anatomy and risk factors of atherosclerosis, diet and exercises therpy. After discharge they received educational package for 6 month. The lifestyle and risk factors of patients as smoking, blood pressure, pulse, blood lipid profile, BMI waist hip ratio (WHR) were measured before amd after the teaching program.* ***Result:*** *Initially, there was no significant difference in the number of non-smokes. After post testing the result revealed that the number of non smokers had singnificanty increased in teaching group from 66% to 90.1% . The number of patients who exercisde, significantly increase after teaching program froom 30% to 88%. while no significant change Was shown by the control. The result showed that WHR of case group before edication was in abnormal range (1.01) compared with control group (0.99), while after education the WHR reduced in case group (0.98), this difference in WHR was found be statistically signnificant the above finding suggest that the individualized teaching program can be helpfull in reducing the risk factors of atherosclerosis in patients with myocardial infarction.*

INTRODUCTION

Economic growth in Iran has brought about marked change in lifestyle and in patterns of health and disease. The lifestyle lf Iranians has become more sededtary and consumption of healthy food such as vegetarian food has decreased while the consumption of animal fats has increased. Rigarding health status, morbidity and mortality from coronary Heart Disease (CHD) rapidly increase and Myocardial Infarction (MI) have now become one of the leading causes of death and their prevalence continues to rise with the extention of life spam[1]. To prevent the onset and recurrence of myocardial infarction, the most important thing is to control the risk factors of atherosclerosis, the main cause of MI. Various lifestyle factors such as, smoking, lack of exercise and inappropriate diet are the risk factors of atherosclerosis Physiological factors such as, obesity, high Serum lipid level (cholesterol, triglyceride, HDL cholesterol and LDL cholesterols) and high blood pressure are also known as risks factors[2]. Although risk factors have a significant impact on the life of patients with cardiovascular disease, considerable knowledge is required to effets unless lifestyle changes are made. Most patients however, don't achieve satisfactory lifestyle modification due to a lack of knowledge about the characteristics and management of the disease and lack of family support[3]. Therefore, the more effective the teaching the better the effect of education is expected to be [4].

We conducted this study to find more effective ways of reducing the atherosclerosis risk factors in patients with MI, and examined the effectiveness of a teaching program

MATERIALS AND METHODS

Resarch design: A randomized comparison group of pre post test experiment design was used to the effectieness of an individualized teaching program on the reduction of CHD risk ractors in patients with MI The independence variable was the individualized teahing program and the depend variable were the CHD risk factors as smoking, exercise, blood lipid profilem BP, and WHR.

Subjects: Subjects for this study were patients hospitalized in C.C.U ward in shahyd Madani Heart Hospital from January 2004 September 2004. 100 Patients participated in the study, of these 50 patients in teaching group and 50 patients in control group.

Method: Only routine care (verbal instruction) was given group, while an individualzed teaching program was given to the teaching group when the patients were in stable condition. Information was given vertablly in structured way using a booklet developed by the researchers. It contained five using areas that are routinely addressed in cardiac rehabilitation program: Nature of disease, risk factors and their modification, diet and exercise. Teaching was provide to the teaching to group the admission period by researcher when the patients were ready to dischangg to their homes. These subjects receivde educational package about modification of lifestyle.

Statiscal analysis: Data were analyzed using the SPSS program. Descriptive statistics, chilsquare analyzed was performed to compare demographic characteristics and differences in number of patients with CHD risk factors for the teaching and control groups. Parired t-test was used to test change in the patients blood lipid profile within and between the teaching and control groups.

RESULTS

Demographic characteristics of the patients were for age and family income. There was no significant difference between the control and teaching group for any of the demographic charactertics of patients,

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Mean age of cases was 50.20+ 9.35 and control 52.86+ 8.24 age variable were matched for the cases and control. Approximately 90% were males, 84% belonged to middle and lower socioeconomic staus,

CHD risk 26% of the cases and 70% of controls experienced MI during morning hours i.e. 0-12 AM.

Smoking: Initially there was no significant difference in the number of non- smokers in the teaching and control group. After intervention(teaching), post testing revealed that the number of non-smokers had significantly increase in the teaching group from 30% to 88% in teaching group ($p<0.05$), Cl 3% ,.18-0.45 vs CI 0.78-0.97), while no significant change was seen in the control group (Table).

Waist-hip ratio (WHR): Mean WHR of case group before education was compared with control group (0.99), while intervention the mean WHR reduced in case group to (0.98), this diffferences in WHR was found to be statistically significant

Diabetic Status: Initially the average of FBS (Fasting blood sugar) in case group 128.1 while after 9 mont intervention (modification of lifestyle in patients) the average of FBS decrease to 115.8 as compared with control group, in control the average of FBS did not decrease. This difference in average of FBS in case group was found to be statistically significant ($p<0.05$).

Lipid profile: After modification of risk factors in patients ,the mean total cholesterol was significantly lower in the case group than in the control group. The mean HDL-C level increase in both group; however, no significant difference between before and after intervention was gained, At baseline there was no significant differences in the mean of T.G. in case and control group, while after intervention the mean level T.G. significantly decreased from 255.7 to 177.6. This differences in mean T.G. case group was found to statistically significant ($p<0.05$) As demonstrated in table 3, in spite of a 12 mg/dl and 33mg/dl reduction in LDL level respectively in case and and group, this decline in LDL cholesterol did not gain statistical significance . Similary, despite an increase in HDL cholesterol from 37.4 mg/dl to 38.9mg/dl in case group, in the control group the level of HDL cholesterol did not increase. However, the increase in HDL cholesterol in case group was not found to be statically significant.

DISCUSSION

To study the effects of risk factors modification by mean of nonpharmacological intervention in patients suffering from CHD, we scrutinized every risk factor separately. Each factor was amenable to modification through intervention at behavior. Behaviorally-oriented interventions incorporating cognitive and behavioral smoking association tehniques[5,6], showed positive result in reducing smoking rates in MI patients. Elevated serum cholesterol concentration were reduced by intensive dietary modification. Thus major changes in dietary habits can achieved in CHD patients and may even lead to stabilization or regression of coronary atherosclerosis. These favorable effects may not be attributable solely to the adoption of a low-fat diet, because in some intervention additional component were included, such as stress management or exercise training[7,8].

Patients educational is an essential component of patients after MI , and has been found to be cost effective in terms of its potential to reduce recidivism and the length of hospitaization[9]. As patients learn by a variety of methods, it is most efficacious to match an individual learning style with an appropruate teaching technique group didactic lass foster a passive type of learning exprience and require that the patients be ready to learn ata specife time. Individual teaching requires that a patients be more active during the learning process that the individual be able to choose his or her learning time.

In this study indvidualized teaching was updated to assist patients to understand the cause of MI, identify risk factors present in their lifestyle and suggest possible modifications or the removal of risk factors identified. We provided information in a structured essily understood way to encourage patients to adopt behavior that will result in improve health status. Our result demonstrate favorable trends in sereral important areas. Specially a dramatic increase in non-smokers exercise compliance and increase HDL cholestetol.

The number of an non- smokers after the program implementation was significantly higher in the teaching group. This finding coincides with the result that intervention in improved in the form of individually planned consecutive teaching sessions achieved a reduction in cigaratte consumption. However this, conflicts with finding of a previous study which reported that there were no significant difference in smoking cessation between an experimental and a control group[10]. We individualized teaching program has a greater valur. Since most patients includee in the study had a fear of chest pain and heart attack, they did't want to actively exercise, and had no specfie knowledge regarding exercise. We taught how to measue radial pulse to assess the intensity of exercise so that they could exercise with confidence. Subject exercising regularly were significantly increase after the program in teaching group. Almost the same result were reported in several previous studies[11,12]. It is extremely to hard to draw definite conclusion from these result, but it suggest that this teaching program may be helpful and benificial at reducing the risk factors of atherosclerosis in myocardial infraction patients.

Table: *Distribution of Smoking habit in Iranian CHD patients before and after intervention.*

Variable	Before Intervention						After Intervention					
	Case			Control			Case			Control		
	N	%	CI 95%	N	%	CI 95%	N	%	CI 95%	N	%	CI 95%
Smoking												
Yes	15	30	0.18-0.44	37	74	0.45-0.71	5	10	0.01-0.18	15	30	0.18-0.44
No	33	66	0.55-0.81	20	40	0.28-0.56	43	86	0.81-0.98	33	66	0.55-81
Smoke less than 20 Yes	8	16	0.28-0.70	15	30	0.23-0.51	5	10	0.01-0.18	13	26	0.63-1
No	7	14	0.23-0.71	24	48	0.46-0.76	3	6	0.09-0.23	3	6	0.08-0.37
Smoke more than 20 Yes	7	14	0.15-0.82	12	24	0.18-0.48	0	0	-	2	4	-0.04-0.71
No	4	8	0.28-1.04	26	52	0.51-0.81	7	14	1-1	4	8	0.28-1.04

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