Asian Journal of Pharmaceutical and Health Sciences
www.ajphs.com

Assessment of quality of life of diabetic dyslipidemic patients with cardiovascular disease

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ARTICLE HISTORY

Received: 15.12.2016

Accepted: 19.02.2017

Available online: 30.03.2017

Keywords:

Diabetes, dyslipidemia, cardiovascular disease, HRQoL, SF-12v2

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ABSTRACT

The incidence of cardiovascular disease is more common in patients with diabetes than in the general population. Dyslipidemia, the clinically proven risk factor for cardiovascular disease is noticeable common in patients with Type 2 diabetes. Recent studies show that most of the dyslipidemic patients were anxious about getting CHD. It is also suggested that future studies should be undertaken to minimise anxiety in this patients. Thus quality of life assessment is now a days considered essential in cardiovascular disease patients inorder to implement early intervention strategies based on life style changes and beginning of an effective lipid lowering therapy which will help in preventing the future development of any CVD complication. Thus it improve quality of life in this high risk population. An effective patient counselling helps in increasing the disease and therapy related knowledge of the patient and help them in better control of their health condition. Health related quality of life is a multidimensional concept that refers to function and well being on various dimensions of health. Inorder to assess the different aspects of HRQoL, use of multi instrument is required . Applying a questionnaire along with the study disease can be a useful method measuring HRQoL. The SF-12v2 Health Survey (SF-12v2) is a multipurpose,short-form health survey with 12 questions that yields an eight-scale profile of functional health and well-being, as well as two psychometrically based physical and mental health summary measures and a preference-based health utility index

INTRODUCTION

Cardiovascular disease is the major cause of morbidity and mortality in diabetic population which is strongly associated with lipid abnormalities [1]. As per American Heart Association (AHA) reports, at least 68% of the people with diabetes aged 65 or older die of heart disease. Also, diabetic adults are 2-4 times more likely to have cardiovascular disease than adults without diabetes. Therefore, diabetes is considered as a coronary heart disease risk equivalent. Dyslipidemia is another major contributing factor to the development of atherosclerosis [2].

Health-related quality of life (HRQOL) provides a multidimensional perspective that encompasses a patient's physical, emotional, and social functioning [3]. Measuring quality of life is one of several components for determining intervention effectiveness in primary health care settings. The effectiveness of healthcare is determined by measures of clinical changes in patient's condition, indicators of knowledge and self-management, satisfaction with healthcare provision and QoL[4].

Recent studies showed that, most of the dyslipidemic patients were anxious about getting CHD. It is also suggested that future studies should be undertaken to minimise anxiety in this patients [5] Thus quality of life assessment is now a days considered essential in cardiovascular disease patients inorder to implement early intervention strategies based on life style changes and beginning of an effective lipid lowering therapy which will help in preventing the future development of any CVD complication. There are several systems for evaluating quality of life. These range from the general (Medical Outcomes Study 36-Item Short-

Form Health Survey24) to the disease-specific [6].

The SF-12v2 Health Survey (SF-12v2) is a multipurpose, short-form health survey with 12 questions that yields an eight-scale profile of functional health and well-being, as well as two psychometrically based physical and mental health summary measures and a preference-based health utility index [7].

MATERIALS AND METHOD

This prospective observational study was conducted in the cardiology department of a tertiary care teaching hospital after getting approval from an independent ethics committee. The patients were selected during the time period of January to june 2016 .From the 722 patients who visited the cardiology department, 165 patients who satisfied the inclusion as well as the exclusion criteria were allotted for study. Cardiovascular patients aged 30 years or more, who were diagnosed to have both diabetes and dyslipidemia including those newly diagnosed with dyslipidemia and already on hypolipidemic therapy with a lipid profile of LDL-C >100mg/dl, total cholesterol >200mg/dl,HDL-C <40mg/dl and ≥60mg/dl and serum triglyceride >150mg/dl or change in any one of the above lipid parameter, as per NCEP ATP III guidelines were included in the study. Pregnant Women and lactating mothers and mentally retarded were excluded from the study.All the required study materials (informed consent document, patient information sheet, patient information leaflet and data entry form) were designed and the questionnaire SF 12 V2 for assessing the quality of life was obtained. The sample population was divided in to study and reference group. Patient counselling was given only to 83 subjects in the study group. Data regarding the quality of life was collected and entered in SF12 V2 questionnaire. The reports were analysed, documented and then presented. The data entry and statistical analysis were done using software SPSS version 20. For assessing the impact of QoL, the test used was paired sample t-test. A p value <0.05 was considered statistically significant.

RESULTS

Our study aimed to access the health related quality of life of diabetes dyslipidemia patients. From our total population of 165, 83 were randomly assigned to case group, from which 4 were drop out. It was evident that there was an improvement in the second follow up of physical and mental health when compared to patient's baseline values. Mental component summary [MCS] scores of case group were better than physical component summary PCS.

1. QUALITY OF LIFE ASSESSMENT

Table no.1 shows the comparison of baseline versus first follow up and second follow up in both cases and controls. All the individual scores of 8 domains including the physical component and mental component summary also mentioned for the two groups in each review.

Table 1. : Comparison of domains of case and control

Domain	Case			Control		
	Base line	1st Follow up	2nd Follow up	Base line	1st Follow up	2nd Follow up
PF	30.12±27.26	33.79±28.77	40.82±29.93	31.09±23.75	31.82±23.17	35.39± 21.97
RP	39.76±19.44	43.32±19.48	46.92±20.31	41.01±17.15	41.39±15.74	43.01±16.53
BP	27.71±24.38	30.57±25.24	32.13±26.22	28.05±16.85	27.59±15.49	29.87±14.64
GH	24.09±16.67	30.73±19.86	35.29±22.78	26.95±15.23	24.54±11.04	26.49±8.39
VT	39.76±19.53	42.65±19.44	48.13±20.25	40.55±18.27	35.38±17.37	35.39±15.89
SF	43.07±26.28	48.76±26.88	58.63±27.85	49.69±19.04	47.40±17.95	56.81±17.50
RE	44.57±20.68	53.19±22.53	60.80±26.36	45.27±15.79	45.13±16.11	45.94±15.89
MH	46.38±17.41	51.45±18.51	60.45±20.04	44.36±15.85	42.05±15.43	43.83±14.85
PCS	34.78±7.06	38.95±6.95	42.39±8.92	35.48±5.47	35.43±4.59	36.29±4.07
MCS	40.26±7.64	49.03±6.20	57.81±5.64	40.69±5.88	38.94±5.68	39.97±5.77

2. Change in PCS after Counselling in Case

Table no.2 : shows the change in PCS after counseling in case. The PCS score was 34.78 during baseline, 38.96 during first follow up and 42.39 during second follow up.

	Mean	SD	% Change	t - value	df	p – value
Baseline	34.78	7.063				
Follow up 1	38.96	6.957	12.022	7.237**	78	0.000
Follow up 2	42.39	8.923	21.908	9.638**	78	0.000

** The difference is significant at 0.01 level.

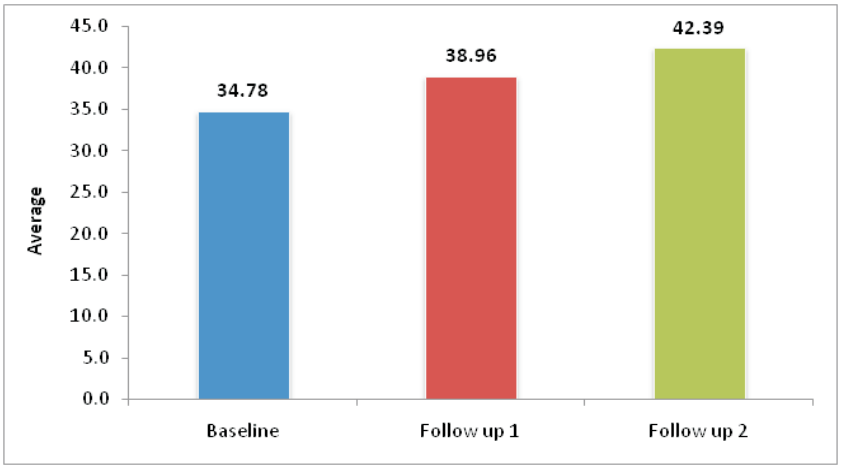

Fig 1 : Shows Change in PCS after Counseling in Case

3. Change in PCS without Counselling in Control

Table no.3 : Shows the change in PCS without counseling in control. The PCS score was 35.48 during baseline, 35.43 during first follow up and 36.29 during second follow

	Mean	SD	% Change	t - value	df	p – value
Baseline	35.48	5.473				
Follow up 1	35.43	4.586	0.143	0.217 NS	76	0.829
Follow up 2	36.29	4.073	2.260	2.007*	76	0.048

* The difference is significant at 0.05 level.
NS => The difference is not significant.

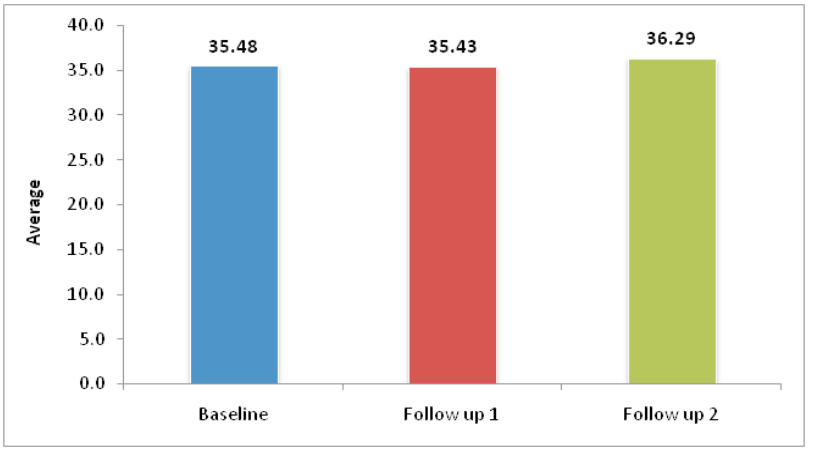

Fig 2 : Change in PCS without Counselling in Control

4. Change in MCS after Counseling in Case

Table no. 4 : Shows the change in MCS after counseling in case. The MCS score was found to be as 40.26 during baseline, 49.03 during first follow up and 57.82 during second follow up.

	Mean	SD	% Change	t - value	df	p – value
Baseline	40.26	7.649				
Follow up 1	49.03	6.204	21.775	13.713**	78	0.000
Follow up 2	57.82	5.645	43.603	22.472**	78	0.000

** The difference is significant at 0.01 level.

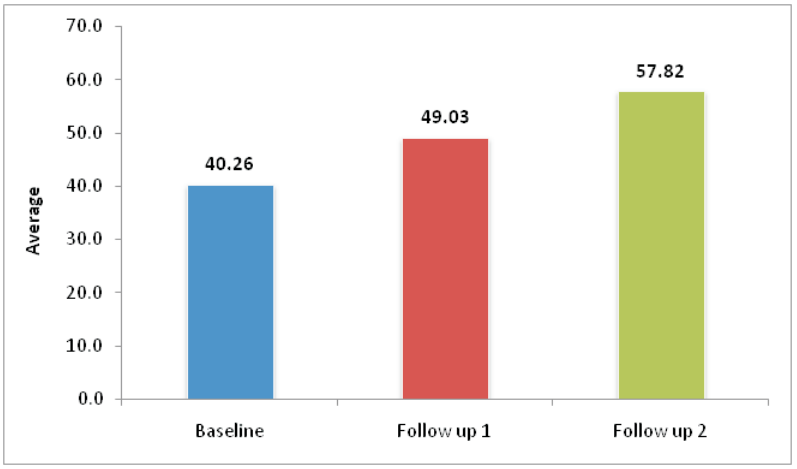

Fig 3 : Change in MCS after Counseling in Case

5. Change in MCS without Counseling in Control

Table no.3 : Shows the change in PCS without counseling in control. The PCS score was 35.48 during baseline, 35.43 during first follow up and 36.29 during second follow

	Mean	SD	% Change	t - value	df	p – value
Baseline	40.69	5.885				
Follow up 1	38.94	5.685	4.299	3.727**	76	0.000
Follow up 2	39.97	5.769	1.777	1.461^{NS}	76	0.148

* The difference is significant at 0.01 level.

NS => The difference is not significant.

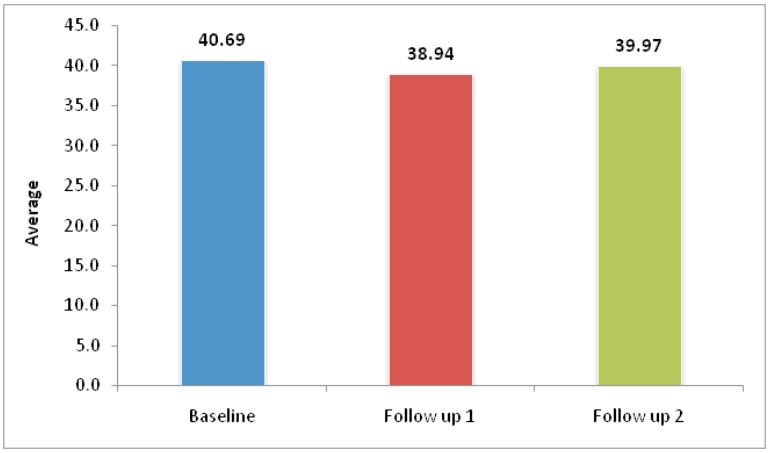

Fig 4 : Change in MCS without Counselling in Control

DISCUSSION

A Study by Mukhopadhyay Jotideb et al proved that inadequate communication between physician and patients is a major reason for patients poor knowledge about their disease and therapy. This miscommunication is frequently seen when physician modifies the treatment regimen but the patients might still follow the previous wrong regimen [6] . Thus, the role of a clinical pharmacist is to encourage the communication between patient and health care professionals by providing them with patient counseling in order to enhance their quality of life.

Aim of our study was to assess the health related quality of life in diabetic dyslipidemic patients. It was observed that, there was an improvement in the second follow up physical and mental health scores when compared to patient's baseline values. MCS scores of case group were better than PCS. The MCS scores were 40.26±7.64 in baseline and 57.81±5.64 respectively, but the corresponding PCS scores were 34.78±7.06 in baseline and 42.39±8.92 in the second follow up.

After the second follow up, these patients had a better score in mental health components than their physical health components. Mean general health was the least in the baseline which showed further improvement during second follow up. Mean role emotional and mean mental health were the most improved functions, whereas bodily pain and general health were the least improved ones. The same result was observed in follow up one. The most affected dimensions in the present study were bodily pain and general health. When we considered the remaining 82 patients which were assigned in the control group with 5 drop outs, general health and bodily pain were the least improved function. The present study also showed that, the PCS and MCS scores for control group was lower than the case group, and most of the SF12 domains were better for case group when compared with control group after the second follow up. As per lichtman et al (2016) , poor mental health is prevalent in most of the individuals with cardiovascular disease and hence an effective patient counseling would help in achieving improved mental health in such patients [8].

Els Clays et al (2012) reported that cardiovascular patients are mostly prone to have impaired health related quality of life(HRQoL) because of their physical functional and psycho-social limitations. Poor HRQoL are capable of predicting morbidity and mortality in cardiovascular disease patients even if the risk factors are under control. An association between HRQoL and physical activity was observed, indicating better HRQoL in physically active patients (9). Sevinc et al (2010) also reported a high HRQoL in patients who were physically active or exercised regularly when compared to sedentary patients. A significant association was also observed between smoking cessation and improved health status [10,11]. A significantly high HRQoL was reported in those patients who quit smoking [12,13]. Study by Els Clays et al had concluded the importance of promoting healthy life style changes in coronary patients, both as a means of prevention of recurrent events as well as to increase their quality of life [9].

In our study, it was observed that the PCS scores of case group showed an increment in the second follow up when compared to their baseline values. Their MCS scores were much better than their PCS scores. There was also improvement in their overall MCS scores in the second follow up, when compared with their baseline values. The results obtained were also significant. When considering the PCS and MCS scores of the control group, there was an improvement in their health status. But comparing it with the improvement seen in case group, the overall increment in control group was low. The PCS scores in the second follow up and the MCS scores in the first follow up were only significant in control group. Our study concluded with a significant increase in both physical and mental health status of the case group when compared with the control group.

CONCLUSION

An effective patient counselling helps in increasing the disease and therapy related knowledge of the patient and help them in better control of their health condition. Along with various studies carried out around the world, our study also establishes that with the right information and details provided to the patient population regarding their condition, patient counselling plays a pivotal role in improving the health related quality of life in diabetic dyslipidemic patients. A significant increase in both physical and mental health status of the case group was observed when compared with the control group.

ACKNOWLEDGMENT

I thank Dr. Shafeeq Mattummal and Dr. Anil Babu A for their encouragement and guidance in the execution of this study. I also thank my co-authors for their valuable suggestions and timely help, the cardiology faculty for their support and our beloved patients for their cooperation during the study

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