Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 03, pp.27535-27538, March, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

IMPACT OF PHARMACEUTICAL CARE AND ASSESSMENT OF QOL OF CABG AND PTCA PATIENTS WITH CO-MORBID CONDITIONS

Nithiya Regi Kuriakose, Dr. Shafeeq Mattummal, Merin Suresh, Jisha Sara John, Anil Babu, A., Prof. R. Raju and *Santhra Vincent

National College of Pharmacy, Manassery, Mukkam, Kozhikode, Kerela

ARTICLE INFO

Article History:
Received 07th December, 2015
Received in revised form
20th January, 2016
Accepted 25th February, 2016
Published online 16th March, 2016

Key words:

Pharmaceutical care,
Quality of care, CABG,
PTCA.

ABSTRACT

Background: The aim of this study is to assess the quality of life of CABG and PTCA patients with co morbid condition .
Methods: This study was a prospective, well-controlled, interventional study conducted in 120 patients over a period of 6 months in a tertiary care teaching hospital. Patient quality of life were assessed using MacNew Heart related QoL questionnaire.
Results: In this study, commonly seen co-morbid condition is Type 2 DM (65%) and least condition is Epilepsy (3.3%). Some of the risk factors identified among patients were Type 2 DM, Hypertension, Dyslipidemia, Family History, Social habits and Obesity. The study showed significant improvement in quality of life ($P < 0.01$).
Conclusion: The present study was performed to get a comprehensive overview of the impact of pharmacist in improving the QOL of CABG and PTCA patients and managing the co-morbid condition hence reduces the chances of re-occlusion.

Citation: Nithiya Regi Kuriakose, Shafeeq Mattummal, Merin Suresh, Jisha Sara John, Anil Babu, A., Prof. R. Raju and Santhra Vincent, 2016. "Impact of pharmaceutical care and assessment of QOL of CABG and PTCA patients with co-morbid conditions", *International Journal of Current Research*, 8, (03), 27535-27538.

INTRODUCTION

Coronary Artery Bypass Graft (CABG) and Percutaneous Trans-luminal Coronary Angioplasty (PTCA) are revascularising methods used in Ischemic Heart Disease patients. The decision of CABG or PTCA is based on the extent of IHD and ventricular functions of the heart. PTCA involves the insertion of a guide wire and inflatable balloon into the affected coronary artery and enlarging the lumen of the artery by stretching the vessel wall. CABG become common in IHD patients by the introduction of saphaenous vein graft replacement for the severe occluded coronary artery by Favorolo and Garret in 1967 (Patel *et al*., 2012). The patients who underwent CABG and PTCA usually have co-morbid conditions such as Type 2 Diabetes Mellitus (DM), Chronic Obstructive Pulmonary Disease (COPD), Anxiety and Depression that negatively influence the survival of the patients. The frequency of Percutaneous Coronary Intervention (PCI) were increased by more than 300% between 1987 and 2003, to more than 1.2 million procedures annually.

Corresponding author: Santhra Vincent,
Natioal College of Pharmacy, Manassery, Mukkam, Kozhikode, Kerela

There were more than 467,000 CABG surgeries performed on 268,000 patients in 2003.Currently about 85% of patients undergoing PCI receive an intracoronary stent and less than 15% have balloon angioplasty (Spinter *et al*., 2007). From the various studies it was found that approximately 35% patients who underwent CABG or PTCA had DM, 24% had Peripheral Vascular Disease (PVD),18% had COPD. Approximately 20.3% were obese of which 6% were severely obese (Scrutinio and Giannuzzi, 2008). The 2006 update of Heart and Stroke statistics from the American heart Association (AHA) reported that 37% of all deaths in 2003 and 58% of all deaths in 2002 were caused by cardiovascular disease. From the databases of WHO, in 2012, cardiovascular diseases were the leading cause of Non-Communicable Disease (NCD) deaths which is 17.5 million (Global health observatory (GHO), 2015). A high-fat and energy-rich diet, smoking, and a sedentary life-style are associated with the emergence of IHD. Pharmaceutical care regarded as an imperative part, provided by a clinical pharmacist in relation health care professionals in the management of chronic condition (Talasaz, 2012). It describes the activities and services through which an individual pharmacist "cooperates with a patient and other professionals in designing, implementing and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient

(Talasaz, 2012; Adibe and Ukwe, 2013; Remington, 1995). Patient counselling is one of the main part of a pharmaceutical care programme in which patients are counselled regarding their disease and therapy. A proper pharmaceutical care can improve the quality of life of the patients by managing their comorbid conditions and etiologic factors (Antonakoudis and Kifinidis, 2006).

Health related quality of life measures of the patient's perspective in the "functional effect of an illness and its consequent therapy upon a patient, as perceived by the patient "or "the value modified by the impairments, functional states, perceptions, and social opportunities that are influenced by disease, injury, treatment, or policy" (Schipper *et al*., 1996). Coronary artery disease influences the health of the patient in several dimensional as the disease is multi factorial. The revascularising procedures are not curative, it is an invasive procedure which decreases the symptoms caused by the disease thereby improves the quality of life of the patient (http://dx.doi.org/10.1590/Ss01032100201130006000011).

The presence of comorbid illness affects QoL in those with CAD. It increases the functional limitation in those with chronic conditions (Lee, 2010). There is a significant relationship between the wellness of the patient after the coronary revascularization procedure and the co-morbid condition they suffer. They act as risk factors for CAD and also worsen the prognosis of patients underwent coronary revascularization procedures (http://dx.doi.org/10.1590/Ss01 03210020113000600011). So there is an increased need in managing the co-morbid condition of the patient along with their heart-related management. The presence of comorbid illness affects QoL in those with CAD. The challenge seems to be to balance the symptoms of chronic illness from co-morbidities and maximizing the benefits of cardiac interventions (Patrick and Erickson, 1993).

MATERIALS AND METHODS

This study is a prospective, controlled and interventional study which is carried out in a 500 bedded tertiary care teaching hospital located in Kerala. A sample of 120 patients were taken who underwent CABG or PTCA during the period of December to June. The sample group were divided into two, as control and intervention group in the ratio 1:2 that means 40 in control and 80 in intervention group. Inclusion criteria for the study population were patients above 18 years of age who undergoing CABG/ PTCA and patient have any other co-morbid condition other than cardiac disorders. Data collection were done on the days before and after one month of surgery. MACNEW Heart Related QoL Questionnaire, is a self-administered questionnaire which is specific for coronary artery disease patients. It consist of about 27 questions, which is distributed into 3 domains mainly physical, emotional, social and global. Each questions have score ranges from 1 to 7 point and the maximum is 7 and the least is 1 (Höfer *et al*., 2004). The intervention group patients were counselled on various aspects like co-morbid conditions, lifestyle modification, diet and their management before the surgery. They were also asked to come for the follow up after one week of the surgery were they are, counselled regarding the comorbid conditions, drugs and they are also provided with patient information leaflet but the control group was not counselled. After one month (second follow up) their MAC NEW was completed. Data were analyzed using the statistical package of graph pad prism version 6. The control and case group were compared by using t- test, to check the result are statistically significant ($p < 0.05$).

RESULTS

From the sample of 120 patients, 71(59%) were PTCA and 49(41%) were CABG. The sample consisted predominantly of men (80%) and more in age group of 60 -69 years. Regarding the co morbid condition, Diabetes Mellitus was predominant of about 65%, followed by COPD (15.83%), Asthma (4.17%), PVD (3.33%), and Epilepsy (1.67%). Some patients were found to have more than one co-morbid condition mainly Diabetes Mellitus along with, COPD (5.83%) CKD (2.5%) and Parkinson's disease (1.67%).

The quality of life of the patients were assessed by MAC NEW questionnaire shown in table no. 1. In control group, Physical domain has the lowest mean score (3.21±0.55) and emotional domain has the highest (3.21±0.55).In case of intervention group, Physical domain has the lowest mean score (3.01±0.58) and emotional domain has the highest mean score (3.47±0.48).

Table 1. Comparative distributions of Mac New QoL Domains

QOL Domain	Control (Mean ±SD)	Intervention (Mean ±SD)	P value
Global			
Baseline	3.34±0.466	3.26±0.514	P<0.05
Follow up	3.36±0.57	4.47±0.67	
Physical			
Baseline	3.21±0.55	3.01±0.58	P< 0.05
Follow up	3.38±0.45	4.46±0.80	
Emotional			P<0.05
Baseline	3.56±0.51	3.47±0.48	
Follow up	3.66±0.47	4.59±0.69	
Social			P<0.05
Baseline	3.25±0.51	3.05±0.68	
Follow up	3.34±0.38	4.37±0.86	

When comparing the scores of different domains of quality of life in pre and post-operative procedures, they showed a significant improvement in all domains.

DISCUSSION

The result of the study helps the health care professionals to give proper health education regarding the co-morbid condition, disease of the patients, which helps to improve the patient complains to the medicine, such that an improvement in the quality of life can be observed. The males are predominant as compare with women. Women have less prevalence for CAD as they have a natural protective mechanism against vascular disease (Maas and Appelman, 2010). No woman of less than 40 age is seemed to have undertaken the procedure in the study group. The women until their menopause have estrogen hormones which maintain a patent cardiovascular system (Selwyn and Braunwald, 2005; DiPiro *et al*., 2011; Sawatzki *et al*., 2007). The measurement of QoL of patients is an effective tool in measuring the effectiveness of an

intervention. In the study QoL of the patients is evaluated to determine the effectiveness of the patient counselling for co-morbid conditions. The QoL of the patients in the control group was similar before and after the counseling. The QoL of patients in the intervention group shows significant difference after the intervention and it shows an improvement in the QoL of the patients after the counseling. The follow-up values of the patients were compared and it also shows that the patients who underwent the patient counselling program have significantly improved QoL. Which shows that the patient counseling and pharmaceutical care provided by a clinical pharmacist could improve theQoL of the cardiac patients (Talasaz, 2012). This may be due to that, in a cardiac surgery setting the major care is given on the basis of surgery and a little care is given for the co-morbid condition, which is done by corresponding specialty. The patients are more unlikely to take care of their co-morbid condition unless there is a flare up of their disease. This treatment will most likely to terminate at the remission of their symptoms. In Indian settings measuring the QoL of patients during treatment is very little. In study we found that while filling up the QoL questionnaires and giving counselling, patients are becoming more enthusiastic towards the therapy. They become aware of their physiological and pathological condition. They also became aware that taking care of their co-morbid condition is essential for the health of their heart. The first parameter in the QoL tool was Mac New Physical. The parameter shows significant improvement before and after the intervention for both control and interventional group. As the result seem to be contradicting the overall scenario. But the actual fact behind the scene is such that, while undergoing CABG and PTCA both the groups were having physically low QoL. And they were having bed rest after the procedure. But after one month when the follow up was taken, patients in both intervention and control groups have experienced improvements in their physical QoL. But when we compare the mean of the follow-up QoL values of the intervention and control groups, their difference also seems to be statistically significant, which means the improvement occurred to the intervention group were much more than that of the control group who did not undergone the patient counseling and pharmaceutical care program. It is because the patients were motivated to have mild exercise as a part of their care which do not adversely affect the cardiac health but also helped them to relieve the pain that occurred due to the surgery. Sawatzky *et al*. observed that those with chronic illness tend to participate in less physical activity which in turn can worsen their physical QoL and increase problems such as immobility and pain (Sawatzki *et al*., 2007). CAD is a progressive condition and while procedures seek to relieve symptoms, they are not curative. The importance of monitoring and managing other comorbid conditions is essential to maximize physical QoL. The challenge for healthcare professionals is to assess patients, recognize and treat these potentially confounding variables and ultimately improve a patient's QoL.

The second parameter was Mac New Emotional in which the baseline values and the follow up values of the control group were compared and didn't show any statistically significant improvement in their emotional parameters, while the intervention group showed statistically significant improvement in their emotional QoL. When comparing the follow up values of the intervention and the control group, the intervention group showed statistically significant improvement in their emotional parameter. This shows that the patients become more aware of their disease condition and they become more confident in handling their pathologic condition. This indirectly reflects in their emotional parameter. The final parameter in the Mac New Questionnaire is Mac New Social. This parameter evaluates the social activities of the patient. The baseline and follow-up values of the control group were compared and there were no statistically significant difference. The baseline and follow-up values of the intervention groups were also calculated but it shows statistically significant variation which indicates that the social activities of the patients were improved. The follow-up values of the intervention and control group were compared and the result was such that the intervention group showed statistically significant improvement in Mac New Social values. This indicates that the social life of the patients who underwent the patient counseling was much better than that of the control group. The patients in the intervention group were prompted to have a relaxed mind free of stress and taught them how the stresses adversely affect their Heart Related Quality Of Life.

Conclusion

The study was performed to get a comprehensive overview of the impact of pharmacist in improving the QOL of CABG and PTCA patients. Managing the co-morbidities reduces the chances of re-occlusion thereby the QOL can be improved. Improvement in patients QOL, level of care and management of co-morbidities justify the need for active collaboration between clinical pharmacist and physicians in the management of CAD patients who underwent coronary revascularizing procedures, CABG and PTCA.

REFERENCES

Adibe MO, Ukwe CV. The Impact of Pharmaceutical Care Intervention on the Quality of Life of Nigerian Patients Receiving Treatment for Type 2 Diabetes. Value in Health Regional, issues 2 2013.

Antonakoudis H, Kifinidis K. Cardiac Rehabilitation Effects on quality of life in patients after acute myocardial infarction.Hippokratia.2006 oct-dec10(4)176-181. PMCID: PMC2464252.

Boni AL, Martinez JE. Quality of Life of Patients undergoing coronary artery bypass grafting. http://dx.doi.org/10.1590 /Ss010321002011300060011.

DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM. Pharmacotherapy a pathophysiological approach.7th edition. New York, NY: McGraw Hill: 2011:217-244.

Global health observatory (GHO) data [type of medium-internet].World Health Organization. [cited on 10/7/2015] available from: http://www.who.int/gho/ncd/ mortality/ morbidity/cvd/en/.

Höfer S, Lim L, Guyatt G and Oldridge N. The Mac New Heart Disease health related quality of life instrument: A summary. Heal and Qual of Life Outco 2004, 2:3 doi:10.1186/1477752523.

John JS, Suresh M, Kuriakose NR, Vincent S, Babu A. Impact of Co-Morbidities in Assessment and Management of Cardiac Intervening Patients. *AJPTR,* ISSN NO.2249-3387.

Lee GA. 2010. Coronary Artery Disease and Quality of Life. In: JH Stone, M Blouin, editors. International Encyclopedia of Rehabilitation. Available online: http://cirrie.buffalo.edu/encyclopedia/en/article/134/

Maas AHEM, Appelman YEA. Gender differences in coronary heart disease. *Netherlands Heart Journal*, 2010: 18(12):598-602.

Patel MR, Dehmer GJ, Hirshfield JW, Smith PK *et al*. ACCF/SCAI/STS/AATS?AHA/ASNC/HFSA/SCCT, 2012 appropriate use criteria for coronary revascularization focused update: A report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, Society for Cardiovascular Angiography and Interventions, Society of Thoracic Surgeons and American Association for Thoracic Surgeons. *J Am Coll Cardiol*., 2012, 59(9): 857-881; do: 10.1016/j.jacc.2011.12.001.

Patrick DL. and Erickson P. 1993. Health Status and Health Policy. Quality of Life in Health Care Evaluation and Resource Allocation. New York, Oxford University Press; 1478.

Remington JP. 1995. The science and practice of pharmacy.1st edition. Easton: Mack Pub.co. pg no: 383-384.

Sawatzki R. Liu-Ambrose T, Miller WC and Marra CA. 2007. Physical activity as a mediator of the impact of chronic conditions on quality of life in older adults. Health and quality of life outcomes. 5:68. DOI:-10.1186/1477-7525-5-68. Article available online from:- www.biomedcentral.com/content/pdf/1477-7525-5-68.pdf

Schipper H, Clinch J, Olweny CLM. 1996. Quality of life studies: Definitions and conceptual issues. In Quality of Life and Pharmacoeconomics in Clinical Trials [2nd edition]. Edited by Spilker B. Philadelphia, Lippincott Raven Publishers; 1123.

Scrutinio D, Giannuzzi P. 2008. Co morbidity in patients undergoing coronary artery bypass graft surgery: impact on outcome and implication for cardiac rehabilitation. *Eur J Cardiovasc Prev Rehabil*., 15:390.

Selwyn AP, Braunwald E. 2005. Ischaemic heart diseases. In: Kasper DL, Fava AS *et al*. Harrison's Principles of Internal medicine.16th edition. New York, NY: McGraw Hill, 1434.

Spinter SA. 2007. Acute Coronary syndrome; Evolving Practices In: Dunsworth TS, Richardson MM; Cheng J *et al* eds. Pharmacotherapy self-assessment program, 6thedition. Cardiology. Lenexa, KS: *American College of Clinical Pharmacy*, 59-63.

Talasaz, AH. The Potential Role of Clinical Pharmacy services in patients with cardiovascular diseases. *J The Univ Heart Ctr*., 2012; 7:41-46.

****