

Does Coronary Artery Bypass Graft Surgery Improve Whole Aspects of Quality of Life?

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Abstract:

Background:

The aim of this study is to examine changes in the health related quality of life as perceived by patients 12 months following CABG procedure.

Methods:

131 patients were included in the study and were interviewed by trained personnel using short form 36 (SF36) questionnaires to determine changes in quality of life following CABG. The mean age was 59 +/- 8.9 years and about 75% were males.

Results:

Approximately 90% of patients experienced an overall improvement in their functional health status, while 5% felt no change compared to pre-operative period and another 5% actually felt worse than prior to the procedure. 70% of patients could perform their everyday activities easily and almost half thought they were more relaxed. Interestingly about 30% of patients experienced disturbance in their sexual function following the operation. There was a significant relationship between improvement in ejection fraction and post-operative QOL among our patients

Conclusions: CABG results in improved health related quality of life both in physical and mental domains. There still remains a group of patients who do not experience any benefit in their functional health despite undergoing this major procedure, identifying these patients is beneficial in counseling prior to the operation.

Keywords:

Coronary Artery Disease, Coronary Artery Bypass Graft, Quality of Life

Introduction:

The primary indications for CABG are improvement for survival and quality of

life (1). The factors influencing survival following CABG has been studied and defined extensively and has been used by clinicians for case selection and advising patients. However in many patients who undergo this operation, and in particular elective procedures, increased longevity is not expected, instead relief of angina and improved health related quality of life are the main aims of surgical intervention.

It is expected that 83% of patients be free of angina 5 years after CABG, reducing to 63% after 10 years (2). However removal of angina alone is not a measure of quality of life and varieties of individual activities in daily life including assessment of exercise capacity and return to employment should be considered. Ferrans defines quality of life as "a person sense of well being that stems from satisfaction or dissatisfaction with the areas of life that are important for him/her" (3). In today's practice QOL is measured using especial questionnaires whose efficacy has already been confirmed.

We conducted a prospective observational study using short form 36 (SF36) questionnaires to determine the QOL 12 months after this procedure as perceived by the patients.

Materials & Methods

This is a prospective observational study and the short form 36 (SF36) questionnaire was used in which eight components of QOL were considered including; general health, physical activity, bodily pain, social functioning, mental health, energy and vitality, role limitation due to general or mental health problems.

131 patients who had undergone CABG procedure were called to the clinic 12

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months after the procedure and were interviewed by trained personnel using SF 36 questionnaire. No interviews were made pre-operatively and the patients were asked to state their perceived improvement or otherwise compared to the period before the operation.

Table 1 shows patients' characteristics, including job and educational status. The mean age was 59 +/- 8.9 years and about 75% were males. Post-operative complications are listed in Table 2. Considering chest wall pain as a complication, it can be seen that it was the most common complaint. 4.6% of patients had severe pain during physical activity, while 36.6% complained of only mild pain and more than half had no pain at all.

Table 1. Patients Characteristics

• Age:	35-80 yr Age < 40: 0.7%	mean=59+/-8.9 Age >70: 13%
• Sex :	Female:25.2%	
• Weight:	51 – 92 Kg.	
• Height:	149 – 187 cm.	
• CPB time:	48 – 123 min.	
• Cross-clamping time:	29 – 75 min.	
• Graft number:	2 – 5	
• Job status	29.8%	
• Government employee	22.2%	
• Farmer/ Worker	23.7%	
• House maker	23.3%	
• Businessman		
• Education	38.9%	
• No education	39.7%	
• Primary school	12.2%	
• High school		
• University	9.2%	

Table 2- Post-operative complications

Surgical bleeding	3.1%
Peri-op MI	2.4%
Wound infection	0.8%
Mediastinitis + dehiscence	0.8%
Chest wall pain	6.9%
Acute renal failure	1.6%
Neurocognitive disorders	2.4%
pneumonia	0.8%
IABP	2.3%
Hypertrophic scar	1.6%

Results:

The overall benefit of the procedure as perceived by patients 12 months after the operation was 89.4%, while almost 5% considered to have experienced no benefit from their operation and another 5% considered to be worse off.

Table 3 summarizes the physical and mental status of patients after the operation. As can be seen more than 70% of patients could easily perform their everyday activities, while more than half were unable to do hard tasks. In terms of psychological effects; 44% thought they were more relaxed following the operation.

We evaluated the job status of patients postoperatively; 30.6% had no change in their job situation, 48.9% thought they are doing better at their job, while almost 10% of patients had given up work or retired and another 10% had reduced their job activities. The sexual life of patients showed more than one third of patients considered being worse than pre-operative period. 31.7% complained of decreased libido and 2.4% had impotence. However 13% were better and 51% had no change with this regard. Males were more likely to complain about sexual disorders.

Table 4 shows improvement in different aspects of quality of life after CABG with significant improvement in general health and daily work quality.

There was a significant relationship between improvement in ejection fraction and post-operative QOL among our patients (Figure 1), however we did not find any correlation between age, sex, job status, income, education, pre-operative NYHA, occurrence of complication, CPB or cross clamp time.

Comments:

Patients are referred for coronary revascularization mainly for relief of angina and improved survival. The ACC/AHA guidelines for CABG suggest that improvement in health related quality of life is the main indication for this procedure (1).

Quality of life (QOL) is affected not only by existence of symptoms but also the physical and mental abilities. To have a good QOL one must be able to function in a normal manner, and be able to perform daily activities and participate in social functions. The person must be independent with adequate energy levels, have no pain and be able to sleep and rest.

Patients with higher class of angina pre-operatively have

worse QOL scores (4) and these patients get most benefit post operatively from relief of angina and reduced needs for nitrates and other medications. Majority of the patients get relief of symptoms and improved functional status following CABG and this in part results in improved QOL. Patients with angina show a lack of energy, sleeping problems and reduce physical mobility compared to normal population (5). The correlation between improved left ventricular ejection fraction and QOL in this study suggests that improvement in energy level and functional status is an important factor in improvement of life quality.

Our study like others reported in the literature indicates an overall improvement in general quality of life following CABG (6-12). However 10% of our patients considered to have made no improvement or being worse following surgery. It has

been shown that patients with worse pre-operative QOL status get the highest benefit from the operation, and conversely those with relatively good health status prior to operation are unlikely to benefit from the operation. In fact up to 25% of those with good pre-operative QOL scores may show marked decline in quality of life post operatively (6) Therefore apart from those patients in whom the operation does provide a survival advantage (left main stem, depressed LV function), consideration of improvement in QOL takes an important role in selection of patients.

There was a major improvement in physical and mental abilities of patients post-operatively. However almost 50% of patients were unable to do hard tasks, whether this is a psychological consequence of the disease or surgery remains to be determined. In terms of sexual function; one third of our patients, mostly males, complained of decreased libido and 2.4% had impotence. This aspect of health should be explored to find ways of preventing or improving the sexual function of this patient population.

Other factors affecting QOL after CABG is existence of co-morbidity. Welke et al (13) have shown that diabetes and peripheral vascular disease are negative predictors of improvement in physical functional health, and chronic obstructive pulmonary disease is a negative predictor of improvement in mental functional health.

In summary CABG results in physical and mental health improvement, however as much as 10% of patients show no improvement or feel worse following the operation. Therefore patients in whom CABG does not grant a survival advantage should be advised according to predictors of improvement in health status so one can make an informed decision regarding the operation.

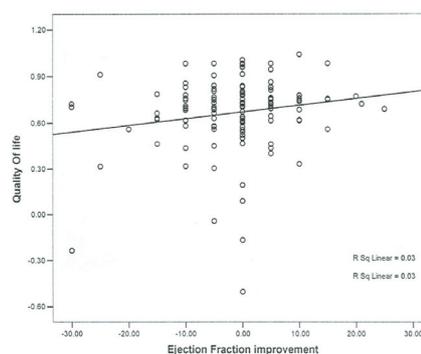
Table 3: Postoperative changes in different aspects of QOL

Physical activity	
Daily work	
Unable	0.8%
Some difficulty	26.7%
No problem	72.5%
Hard Task	
Nearly impossible	51.1%
Possible	42.8%
No limitation	6.1%
Psychological aspect	
Anxiety	13%
Depression/sleep disorders	13.7%
No change	22.1%
More relaxed	44.3%
Happy	6.9%
Family Relationship	
No change	40.5%
Positive effect	12.2%
Negative effect	47.3%

Table4: Improvement of different aspect of quality of life after coronary artery bypass graft.

	NO. (%)	P value
Become asymptomatic	(81.5) 107	P<0.05
Improvement in functional status	(91.4) 120	P<0.05
Improvement in general health	(89.4) 117	P<0.05
Improvement in daily work quality	(72.5) 95	P<0.05
Mental health	(73.3) 96	P<0.05
Patient satisfaction	(85.5) 112	P<0.05

Fig. 1: Relationship between improvement in ejection fraction and post-operative QOL



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