

Assessment of Health Related Quality of Life among Liver Transplant Recipients

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ABSTRACT

Background and Aim: Liver transplantation (LT) is the standard treatment for end-stage liver disease. As a result of advances in surgical techniques and emerging immunosuppressive therapy, the survival and clinical outcomes have improved, and the focus has shifted to Quality of Life (QOL) outcomes after surgery. Many patients are more concerned about Health related quality of life (HRQoL) after LT than longevity, which gives importance to QOL assessments. The present study was undertaken to assess the HRQoL among liver transplant recipients.

Method: A descriptive survey approach was used for the study. Thirty liver transplant recipients who have completed one month after surgery were selected as a sample of convenience. WHOQOL – BREF scale was used to assess HRQoL among liver transplant recipients.

Results: Among 30 subject, 14(46.7%) had high QOL and 16(53.33%) had low QOL. The mean score was highest in general health domain(76.3%) followed by environmental domain (73.5%) and social domain(71.5%) and lowest in psychological domain(66.8%). There was no association between QOL in different domains with any of the variables except general health domain. In general health domain a significant association was found with education and occupation ($p<0.05$). A positive correlation was observed between QOL and duration after transplantation($r=0.276,p=0.014$).

Conclusion: The study concluded that most of the recipients have low QOL but it improves over a period of time. Achieving high QOL depends on adequate awareness regarding post transplant care and regular follow up.

Keywords: Health related quality of life, Liver transplantation, Transplant recipients.

INTRODUCTION

The liver is the second major organ which is transplanted after the kidney so it is clear that liver disease is a common and serious problem in the world. Liver transplantation(LT) is a well-established therapy and has become a treatment of choice in patients with end stage liver disease. It was initially a high risk procedure, but advancements in surgical techniques and emergence of immunosuppressive therapy has resulted in significant improvements in post-transplantation survival. As survival and clinical outcomes of LT improve, the focus has shifted to quality of life(QOL) outcomes after surgery.¹ The World Health Organization defined quality

of life as “the individual’s perception of their life status concerning the context of culture and value system in which they live and their goals, expectations, standards, and concerns”.² It is thus a concept that entails several necessary meanings and relates to the individual’s level of satisfaction in different spheres of life.³

Many patients are more concerned about QOL than longevity, which gives importance to QOL assessments. Quality of life is the perceived quality of an individual’s everyday life, that is, an assessment of their well-being or lack of wellbeing which includes all physical emotional and social aspects of the individual’s life. In healthcare, health-related quality of life (HRQoL) is an assessment

of the individual's well-being that may be affected over time by a disease, disability or disorder.¹

According to a number of studies, liver transplant recipients have a lower perception of their HRQoL than the general population. This is due to variation on the underlying aetiology of the disease, being poorer in patients affected with hepato cellular carcinomas with alcoholic and viral liver diseases.⁴ Fatigue is a common symptom seen in 65% - 85% of the liver transplant recipients, the vast majority of whom perceive it as one of the symptoms that is tolerated the worst, causing powerlessness to 25%. Generally these are symptoms that are minimised or not considered significance in the progress of the illness, although they do cause anxiety to patients and can get worse their functional status. The HRQoL is studied in relation to the progress of the patient prior and subsequent to the liver transplant helps to identify how transplantation make changes in patients wellbeing.^{5,6}

Y. Sirivatanauksorn, W. Dumronggittigule et al conducted a study on Quality of Life among Liver Transplantation Patients in Thailand. The study was performed between October 2010 and January 2011. Data collected from 59 samples by using the Short Form-36 and the Chronic Liver Disease Questionnaire (CLDQ) to evaluate the HRQoL. Orthotopic liver transplantation improved HRQoL of end-stage liver patients and their spouses or caregivers.⁷

There is gradual increase in the number of liver transplantation per year from 54 in the year 2011 to almost 98 by the year 2013 in AIMS, Kochi. This liver transplantation has a significant impact in the quality of life of patients with liver disease. Hence the present study is aimed to investigate the health related quality of life experienced by patients following liver transplantation.

METHOD

A descriptive survey approach was used for the study. The setting of the study was gastrointestinal surgery department Amrita Institute of Medical Sciences and Research Centre, which is a 1450 bedded tertiary care university teaching hospital in South India. AIMS Transplantation team have successfully performed more than 500 liver transplantations with over 85% success rate. Thirty liver transplant recipients were selected as a sample of convenience, according to the usual order

subjects attended their visits in the gastrointestinal surgery OPD. The criteria for inclusion were patients after liver transplantation for at least one month, ability to read and write in Malayalam and English and willingness to participate. Patient who have psychiatric diagnosis or critical illness including unconscious and bedridden patients were excluded from the study.

Study was initiated after obtaining permission from Institutional Ethical Committee. Informed consent was obtained from all the participants prior to data collection.

The socio-demographic variables & clinical data was obtained by using a semi structured interview schedule. Standardized World Health Organisation Quality of Life – BREF (WHOQOL – BREF) Questionnaire was used to assess the HRQoL among liver transplanted recipients.

WHOQOL-BREF questionnaire contains 26 items, with two items from the General Health and 24 items from four domains: Physical health with 7 items (DOMAIN 1), psychological health with 6 items (DOMAIN 2), social relationships with 3 items (DOMAIN 3) and environmental health with 8 items (DOMAIN 4). Each item is rated on a 5-point Likert scale. Raw domain scores for the WHOQOL were transformed to a 4-20 score according to guidelines. Domain scores are scaled in a positive direction (i.e., higher scores denote higher QOL). The mean score of items within each domain is used to calculate the domain score. After computing the scores, they transformed linearly to a 0-100-scale. Score obtained were grouped into two categories that are high QOL and low QOL.⁸

Data was analysed by using descriptive and inferential statistics. The sample characteristics were described using frequency, percentage. Chi – square test is used to find out the association between QOL with selected demographic variables. Correlation between QOL and period after liver transplantation was calculated by using Pearson's correlation coefficient.

RESULTS

Demographic Data

The age of the participants ranged from 18–68 years and majority [20(66.7%)] of them were below 50 years. About 25(83.3%) of the participants were males. Majority, 18(60%) of liver transplant recipients

were Hindu, 9(30%) were Christian and 3(10%) of participants were Muslim. Regarding educational status 18(60%) were with above higher secondary education and majority 21(70%) of participants were employed.

Majority [26(86.7%)] of participant’s area of residence were urban and 27(90%) belongs to nuclear family. There were 9 (30%) participants with 150001 rupees monthly income. 30(100%) participants had received previous information regarding postoperative care of liver transplantation.

Clinical characteristics

All the participants were compliant to follow up. Most of the participants 22(73.3%) had no family history of liver disease. Most of them [19(63.3%)] were non-alcoholic. Within the 30 participants, major indication for liver transplantation were Liver cirrhosis 17(56.7%) followed by Hepatitis and fulminate liver disease 5(16.7%). Regarding presence of co-morbidities, most of participants (77%) have more than one co-morbidities and 23% have no co morbidities. The duration of liver transplantation among majority of the participants [18(60%)] was below one year.

Quality of Life

Out of total subjects, high QOL was observed in 14(46.7%) of the participants, whereas low QOL was observed in 16(53.3%) of the subject (figure 1). Among the different domains of QOL most of them had high QOL in social (71.5%) and overall health (76.3%) domains (figure 2).

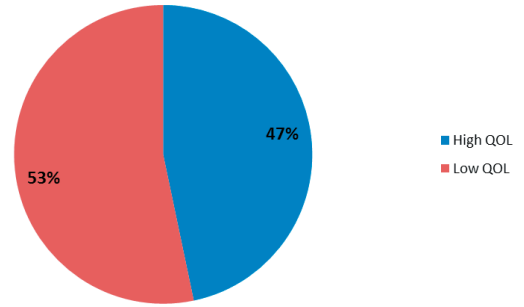


Figure 1: Pie diagram representing percentage distribution of the subjects based on the level of QOL of participants

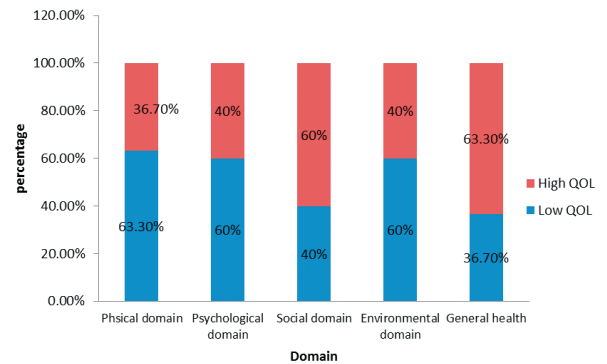


Figure 2: Multiple bar diagram representing quality of life score based on domain

The overall mean quality of life score was 71.2%. The mean score was highest in general health domain (76.3%) followed by environmental domain (73.5%) and social domain (71.5%). The mean score was lowest (66.8%) in psychological domain (table 1).

Table 1: Standard deviation & Mean percentage of subjects in different domains

Domain	Maximum score	Upper range	Lower range	Mean Score	Standard deviation	Mean percentage
Physical domain	35	33	16	24.73	4.63	70.6%
Psychological domain	30	25	16	20.03	2.45	66.8%
Social domain	15	14	8	10.78	1.48	71.5%
Environmental domain	40	37	23	29.4	3.96	73.5%
General health (other)	10	10	3	7.63	1.42	76.3%
Overall	130	111	74	92.57	11.69	71.2%

Association between quality of life and selected demographic & clinical variable

There was no significant association found between overall score of QOL and variables like age, gender, religion, area of residence, type of family, family history of liver disease, use of alcohol, indication for liver transplantation, type of donor and presence of co-morbidities. The QOL in different domains also had no association with these variables except general health domain. In general health domain a significant association was found with education and occupation (table 2).

Table 2: Association between general health component of quality of life and selected demographic & clinical variables

Socio-demographic variables	General health component of Quality of life score				df	X ²	P value
	High QOL		Low QOL				
	Frequency	Percentage	Frequency	Percentage			
Education							
1. Up to higher secondary	4	33.3%	8	66.7%	1	7.751	0.005*
2. Above higher secondary	15	83.3%	3	16.7%	1		
Occupation							
1. Employed	16	76.2%	5	23.8%		4.983	0.026*
2. Unemployed	3	33.3%	6	66.7%			

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Correlation between quality of life and period after liver transplantation

There was a weak positive correlation between QOL and period after liver transplantation (figure 3). The pearson’s coefficient calculated was 0.276 which is significant at p=0.014.

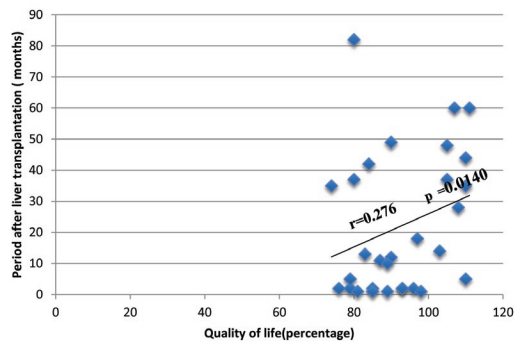


Figure 3: Scatter diagram representing correlation between quality of life and period after liver transplantation

DISCUSSION

Liver transplantation (LT) has become the treatment of choice for several liver diseases that progress to end-stage liver failure. The possibility of prolonging recipient life expectancy has triggered several studies focusing not only on physical problems but also on psychological and psychosocial outcomes.⁹

The present study was conducted to assess HRQOL of liver transplant recipients. WHOQOL-BREF questionnaire was used to assess the HRQOL. The results showed that high QOL was observed in 14(46.7%) of the participants, whereas low QOL was observed in 16(53.3%) of the participants.

A similar study was conducted by Asha Bidare, Rajiv Lochan J etal on “Effect of Liver

transplantation on the Health Related Quality of Life (HRQoL) of a patient with end stage liver failure". Data were collected by using in-depth personal interview and SF-36 Health survey questionnaire tool to assess HRQoL. Fourteen patients (13 adults and 1 child with a median age 49.5 years (range 12-62 years) who underwent liver transplantation and residents of Karnataka were included in this study. Their HRQoL was calculated before and after the liver transplantation. The results showed that HRQoL of a patient with end stage liver failure improves significantly with Liver transplantation. Mean of HRQoL after liver transplant is 72.57. The 't' -ratio is 5.68 ($p < 0.05$). However significant changes can be seen in QoL of a transplanted patient within 2 months post transplantation.¹⁰ In the present study also the mean score is 71.2% and a positive correlation is observed with QOL and period after transplantation.

Another study conducted on 256 liver transplant recipients investigated HRQoL and psychological outcome. The tools used were Medical outcome study short form 36(SF-36) and Beck Anxiety Inventory and self rating depression scale. The result showed that the diseased donor liver transplantation recipients had higher score in social functioning and mental health component followed by physical role functioning. The lowest score in general health. It was also found that 15 (5.9%) recipients had anxiety and four (1.6%) developed severe depression after the operation.¹¹ As per the results of the present study no association was found between type of donor and QOL in any domains. But consistent with the above study findings the mental health domain had a lower score. The overall mean QOL score was 71.2%. The mean score was highest in general health domain (76.3%) followed by environmental domain (73.5%) and social domain (71.5%). The mean score of physical domain shows 70.6%. The mean score was lowest in psychological domain (66.8%).

A retrospective, cross sectional survey was conducted by Hellgren A, Bryand B et al with the aim to provide descriptive data of the experienced health and HRQoL after liver transplantation. The data were collected from 120 liver transplant recipients by using three self administered questionnaire. The result showed that liver transplant recipients were more limited in their physical health than healthy subjects but were equal in social and mental functioning.¹² A systematic review on QOL after liver transplantation demonstrated that liver

transplant recipients experienced improved QOL with reference to the general population and compromised wellbeing when compared with a healthy persons.¹³

In the present study though QOL was low in 53.3% of the participants, the mean overall QOL score was 71.2%. The mean score was highest in all domains except psychological domain. In the present study, there was no significant association between overall score of QOL and selected demographic and clinical variables. There was no association between QOL in different domains with any of the variables except general health domain. In general health domain a significant association was found with education and occupation.

The finding of the study shows that QOL improves over a period of time. Among the different domains of QOL most of them had high QOL in social domain and overall health domains and low QOL in psychological domain. Assessment of QOL of liver transplant recipient in the current setting is helpful to get a better perspective of their problems in different domains and it will help to plan the rehabilitative care accordingly. The study finding also suggests the need for psychological support. More interventions are needed to improve the QOL in the initial period after transplantation.

Conflict of Interest: Nil

Source of Funding: Self-finance

Compliance with ethical Standard

The study was initiated after obtaining permission from the Ethical Committee of Amrita Institute of Medical Science. This article does not contain any studies with animals performed by any of the authors.

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