

# Quality of Life of Patients with Decompensated Cirrhosis Who Undergoing Serial Large Volume Paracentesis

Vasiliki Kontou<sup>1,\*</sup>, Maria Kapella<sup>2</sup>, Andriana Theodorakopoulou<sup>3</sup>, Theodoros Katsaras<sup>4</sup>,  
Spilios Manolakopoulos<sup>5</sup>, Dimitris Pectasidis<sup>5</sup>, John Koskinas<sup>5</sup>

<sup>1</sup>Department of Nursing Specialities, Hippokration General Hospital, Athens, Greece

<sup>2</sup>Director of Nursing, Hippokration General Hospital, Athens, Greece

<sup>3</sup>Hemodynamic Laboratory, Hippokration General Hospital, Athens, Greece

<sup>4</sup>Psychiatric Department, Sotiria Hospital, Athens, Greece

<sup>5</sup>2nd Department of Medicine, Medical School of Athens, National and Kapodistrian University of Athens, Hippokration General Hospital, Greece

## Email address:

gerosideri@yahoo.gr (V. Kontou)

\*Corresponding author

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**Abstract:** Introduction: Serial large volume paracentesis is the most common treatment option for refractory ascites in patients with decompensated cirrhosis. This treatment aims to relieve symptoms and maximize the functionality of the individual's everyday life, and to generally improve patient's QoL to any extent, considering the limits imposed by the course of the diseases and patients health status. Purpose of this study is to assess the QoL of patients with decompensated cirrhosis undergoing serial large volume paracentesis. Material and Method: A cohort of 60 patients attending the 2nd Department of Medicine, Medical School of Athens, Hippokration Hospital was recruited. The data were collected with the help of a two-part anonymous self-reported questionnaire consisting of a sheet containing clinical and demographic information and the SF-36 scale. Mean and standard deviation for continuous data and frequencies, and percentages for categorical data were calculated. Non parametric tests such were applied. For the analysis of the data, the statistical package SPSS20 was employed. Results: Out of the total number of participants in the study, 64.41% were men and 35.59% were women. The average age of the respondents was 70.8, with a standard deviation of 10.9 years. More than half (56.14%) were past smokers, 31.58% were current smokers and the remaining 12.28% were non-smokers. The statistical analysis revealed that patients with higher education ( $p < 0.05$ ) reported better scores in QoL on the scales mental health, functionality, and vitality. Women, according to the results of our research, experienced a better QoL on the scale of physical activity than men ( $p < 0.05$ ). Also, those who were not suffering from another disease and were not smokers had a better QoL. Conclusions: Based on the findings of the present study, it appears that factors such as educational level, marital status, age, gender, hospital readmissions can affect the QoL of patients subject to large volume paracentesis. Implementation and evaluation of health education programs aimed at improving the QoL of these patients and their families is of vital importance.

**Keywords:** Cirrhosis, Decompensated Cirrhosis, Paracentesis, Quality of Life

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## 1. Introduction

Cirrhosis is a chronic diffuse process characterized by diffuse fibrosis and nodular formation of the parenchyma leading to disorder of the hepatic architecture. The word has

its origins in the ancient Greek word "Kirros" that means yellowish [1]. Cirrhosis is a histological diagnosis and is the result of multiple chronic liver diseases. Hepatocyte necrosis

and inflammation is the initial stage followed by connective tissue growth, evolving into diffuse fibrous formation and intense regenerative activity of the cells that finally leads to nodule formation. The process of fibrosis progresses from the initial stages, when the lesions are reversible, to the final stage, when the cirrhosis stage is fully settled and the condition is usually irreversible. At the time of diagnosis of cirrhosis, the necroinflammatory process in the liver may have subsided and is thus not included in the definition [1, 2].

Occurrence of serious complications of cirrhosis, such as jaundice, ascites, hepatic encephalopathy and variceal bleeding determine the phase of decompensated cirrhosis. Over time and without treatment for the underlying liver disease compensated cirrhosis inevitably evolves into decompensated cirrhosis. It is estimated that each year, approximately 2-5% of patients with compensated disease evolve into decompensated cirrhosis and that the 1-year survival drops from 95% to 50%. Prothrombin time prolongation, presence of ascites, age, consumption of alcohol, encephalopathy, low serum albumin levels, bleeding from oesophageal varices and magnitude of portal vein pressure are the main factors associated with survival [3, 4]. For those decompensated patients that ascites is refractory to diuretics the most common treatment option is the serial large volume paracentesis, usually every 3 weeks. Patients with decompensated cirrhosis face serious complications, some of which may be life-threatening.

The purpose of this study is to assess the quality of life (QoL) of patients with decompensated cirrhosis subjected to serial large volume paracentesis.

## 2. Material and Methods

### 2.1. Sample

A Cohort of 60 Patients Attending the 2nd Department of Medicine, Medical School of Athens, Hippokration Hospital Was Recruited

### 2.2. Data Collection Instrument

For data collection was conducted using a two part questionnaire.

This first consisted by a special designed sheet containing social (marital status), clinical (comorbidities, smoking status and more) and demographic information (gender, age, etc).

The second part was the 36-Item Short Form Health Survey (SF-36) framed by Ware and Shelbourne in Boston in 1992. The validated Greek version of SF-36 was used to collect data. It can act as a generic tool measuring the QoL of not only patients, but healthy subjects as well. Indicators that have a positive or negative correlation and their measurements serve to provide reliable conclusions about the QoL. SF-36 consists of 36 questions categorized into the following 8 thematic scales: physical functions, social functions, pain, general mental health, role limitations due to physical problems, role limitations due to psychological problems, vitality, and general perception of health. Answers

to the questions are given on a five-point Likert scale, where 1 stands for better quality and 5 for worst quality [5, 6]. The validated in Greek language version of SF-36 was used [7]. The questionnaire was completed by the patients themselves or by the researcher when he conducted interviews.

### 2.3. Ethics

Ethical standards derived by Helsinki Declaration were followed. Permission to conduct this study was granted by the ethical committee of Hippokration hospital. Moreover, participants have signed a consent form to participate in the study after they had been fully informed for the purpose of the study and their rights to refuse or to discontinue participating in the study. In addition permission for the study was obtained from the ethical and scientific committees of the participating unit.

### 2.4. Data Analysis

Descriptive statistics were initially generated. Frequencies were used to describe qualitative variables and means and standard deviations (SD) were used to describe the quantitative variables. Non parametric test were applied, more specific Wilcoxon test was used to compare the quantitative variables between two groups, while for comparing the quantitative variables between three or more different groups were used Kruskal wallis. In addition Spearman correlation coefficient (r) was used to control the relationship of two quantitative variables. All test had two tailed significance levels and the statistical significance was set to 0.05. For the analysis SPSS 20.0 for windows was used.

## 3. Results

Out of the total of 60 patients who provided full data, 64.41% were male and 35.59% were women. The average age of respondents was 70.8 years with a standard deviation of 10.9 years. The majority of the respondents were married at 86.2%, 6.9% were divorced, while the remaining 6.9% were widowed. Moreover, most of them (86.4%) lived with their spouses, 6.78% of the respondents lived with their children, while the remaining 6.78% lived on their own. With regard to their educational level, most respondents (43.86%) answered that they were primary school graduates, 26.32% were junior high school graduates, 15.79% were high school graduates, while the remaining 14.04% had a higher education degree. More than half (56.14%) of the sample were past smokers, 31.58% were current smokers and the remaining 12.28% were non-smokers. From the analysis of the variables with clinical characteristics, 89.66% of the respondents reported that they had frequent admissions to the hospital and 10.34% of the respondents said that it was their first admission for paracentesis (Table 1).

As per the results of the SF-36 analysis in tables 2 & 3 the association scales of SF 36 with clinical and

demographic characteristics is presented. More specific, women had better physical function than men ( $p < 0.05$ ). Moreover, the physical function variable differs in accordance with the educational level. University graduates reported better physical function than high school and high school graduates ( $p < 0.05$ ).

With regard to clinical characteristics, patients who were not afflicted with comorbidities reported higher scores on the social function count than those with comorbidities ( $p < 0.05$ ). Specifically, diabetics and hypertensive patients had a lower

score in the variability of vitality and social function than those without diabetes and hypertension. We saw that the value of the general health variable was higher in those who were stricken with hypercholesterolemia than those who weren't ( $p < 0.05$ ). In addition, non-smokers reported greater scores on the general health scale than smokers and past smokers. Finally, those who were frequent admissions in the hospital registered a higher score on the scale of physical function than those who were admitted for the first time ( $p < 0.05$ ).

**Table 1.** Demographic Characteristics.

	N	%
Gender		
Men	38	64.41%
Women	21	35.59%
Marital Status		
Single	-	
Married	50	86.21%
Divorced	4	6.90%
Widowed	4	6.90%
Habitat Status		
Children	4	6.78%
Spouse	51	86.44%
Alone	4	6.78%
EDUCATIONAL STATUS		
Primary School	25	43.86%
Junior high-School	9	15.79%
High-School	15	26.32%
University	8	14.04%
Smoking Status		
Non Smoker	18	12.28%
Currently Smoking	7	31.58%
Past Smoker	32	56.14%

**Table 2.** Relation of «Sf-36» with Demographic Characteristics.

Demographic Characteristics	N	Physical Functioning		Social Functioning		Vitality	
		x±sd	p		p		p
Gender <sup>a</sup>							
Men	38	29.72±22.29	0.018	31.75±22.55	0.799	39.86±18.35	0.775
Women	21	44.50±21.57		31.87±25.48		41.75±18.37	
Marital status <sup>a</sup>							
Married	50	34.16±21.34	0.481	31.51±23.34	0.714	40.20±17.47	0.974
Single/Divor/widowed	9	38.88±31.60		33.33±25.00		42.22±22.93	
Habitat Status <sup>a</sup>							
Spouse/Children	55	36.13±21.58	0.148	31.13±23.33	0.447	40.94±18.45	0.397
Alone	4	18.75±37.50		40.62±25.77		35.00±15.81	
Educational Status <sup>b</sup>							
Primary School	25	26.45±24.38	0.009	20.83±19.38	0.001	30.62±19.24	0.014
Junior high-School	9	28.75±5.17		25.00±21.12		45.62±10.15	
High-School	15	44.66±20.91		40.00±16.50		49.67±16.63	
University	8	51.87±20.51		59.37±22.92		47.50±12.81	
Smoking Status <sup>b</sup>							
Currently Smoking	7	39.28±22.80	0.949	39.28±30.12	0.06	46.42±9.88	0.046
Past Smoker	32	34.67±23.34		36.29±22.67		45.64±14.70	
Non Smoker	18	32.94±24.75		19.85±19.79		27.94±21.87	

a= Wilcoxon

b= Kruskal Wallis

**Table 3.** Relation of «Sf-36» with Clinical Characteristics.

Clinical Characteristics	N	Physical Functioning		General Health		Vitality	
		x±sd	p		p		p
Comorbidities <sup>a</sup>							
Yes	45	33.03±21.66	0.328	20.69±18.40	0.322	38.37±18.51	0.260
No	14	40.71±26.66		20.71±10.89		47.14±16.14	
Hypertension <sup>a</sup>							
Yes	13	34.23±18.46	0.841	29.61±22.68	0.173	47.69±10.53	0.115
No	46	35.11±24.33		18.06±13.86		38.40±19.52	
Diabetes <sup>a</sup>							
Yes	10	20.50±25.54	0.035	18.50±18.86	0.368	22.00±20.97	0.002
No	49	37.97±21.45		21.17±16.49		44.47±15.08	
Hypercholesterolemia <sup>a</sup>							
Yes	18	30.83±23.65	0.308	25.83±17.08	0.038	43.33±12.25	0.789
No	41	36.79±22.72		18.33±16.31		39.23±20.40	
Readmission <sup>a</sup>							
Yes	52	34.00±23.34	0.531	20.80±17.03	0.593	42.00±18.15	0.038
No	6	38.33±20.65		18.33±16.93		26.67±14.71	

a= Wilcoxon

## 4. Discussion

The purpose of this study was to assess the QoL of patients with decompensated cirrhosis subjected to serial large volume paracentesis. Demographic factors such as gender and clinical factors such as readmission and smoking status seem to be associated with QoL. The QoL of these patients is an issue of vital importance because the nature and the duration of the disease have a significant impact on their lifestyle. The difficulty of assessing QoL can be attributed to the multiple and inter-induced dimensions of the disease. The patients exhibit an ongoing deterioration of liver function and experience poor physical health as a result of dyspnoea, fatigue, loss of muscle strength, dietary constraints, walking difficulty, and side effects of medication [1]. In addition, the above-mentioned problems are highly conditioned by the degree of adaptation and acceptance of the disease.

The QoL is affected by a variety of factors, such as culture, age and diagnosis [8, 9]. Of course, some of the factors cannot be altered by nursing interventions, such as diagnosis and medical treatment. But there are others that nurses can control, such as the environment, information provided to patients and their family members on personal or social issues, symptom management, and others [3, 10, 11].

Primary education graduates and retired people were more emotionally negative than those who were working and those who possessed a higher education degree. This finding is probably related to age. It is well-known fact that retired people, who are over 65, have a reduced degree of independence. They need the help of another person to visit the hospital, they have difficulties in performing their daily activities, and they possibly have poor financial resources, thereby negatively affecting their QoL [8, 9]. According to Philbin et al. [12], economic constraints and low educational attainment do not lead to compliance with treatment, but instead contribute to a high rate of hospital readmission.

Moreover, according to patient responses, it was found that even taking medication for comorbid conditions such as diabetes, hypertension, hypercholesterolemia and other illnesses

causes them great anxiety. This is because by taking multiple dosages could have a restricting effect on their social life, as some medicines must be taken at particular times [13].

According to the results of the present study, there was no statistically significant difference between genders in the overall QoL scores. However, women experienced more physically negative emotions than men. Similar findings were found in the study by Cottlieb et al., [14] where women reporting more negative QoL and suffering from depression (64%), compared with men (36%). In addition, in other studies, women registered more negative QoL than men in their daily lives and social activities.

With regard to marital status, there was no statistically significant difference in the overall QoL. Single and widowed women were experiencing more negative emotions probably due to the social isolation and lack of companionship that this particular group of patients faced. According to Murbergetal [15], social isolation is a result of the perception of the patient that he/she is no longer able to maintain the same level of social contacts and activities with his family, relatives and friends before and after the onset of the disease. Furthermore, the relationship between social isolation and poor QoL can reflect factors such as the patient's pessimistic perception with regard to the course of the disease.

Besides physical condition, emotional state of the patients can affect health status and the QoL. As the disease aggravates, stress and depression levels elevate and they have the most significant negative impact on the QoL [16, 17].

Researchers suggest that liver transplantation is the therapeutic solution to treat people with progressive and irreversible liver damage. In the pre-transplantation phase, studies indicated that cirrhotic patients usually present a variety of psychological disorders, in particular, major depression disorder, generalized anxiety disorder, adjustment disorder (with depressed mood, anxiety, or mixed), and alcohol related disorders [18-20]. The main finding of these studies showed that QoL and mental health were better for transplant recipients than patients with decompensated cirrhosis, even though transplant patients had a negative self-perception of their health.

These data suggest that although QoL improves after transplantation, psychological intervention throughout the disease process is very important in order to prevent mental disorders that could affect these patients and their careers [21, 22]. Regardless of the stage they are in (pre- or post-transplantation), it is important to ensure that they comply with their medication, diet and physical activity.

## 5. Conclusions

Patients with decompensated cirrhosis and their families experienced and faced many complex problems [19, 24].

The disease, in addition to exhaustive physical symptoms, is characterized by role changes, frequent hospitalizations, financial burden and changes in social support. All these changes can lead to significant depression and a negative impact on the QoL of both the patients themselves and their families. In particular, the above changes in patients' lifestyle can lead to an increase in mortality and mortality rates [13].

According to our results, age, place of residence, educational level, comorbid conditions, re-hospitalization affect the mental health of patients and their QoL. Proper treatment of the disease includes medication, modification of risk factors (smoking, alcohol consumption, and poor nutrition), and change of lifestyle and mental and physical well-being. The patient who does not comply does not manage to improve his/her QoL.

The need to design, implement and evaluate health programs that aim to improve the QoL of these patients and their families is of paramount importance, and we wish the present study to form the basis for such programs in the future.

Nurses can have a very important role to play in prevention, primary, secondary and tertiary care. They contribute along with other health professionals like doctors, psychologists, social workers to improve the QoL of individuals. With various intervention programs, they support these people socially, emotionally and psychologically.

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