Anxiety and Stress Levels on Liver Transplantation Candidates

H.R.S. Teixeira[a], D.M. Marques[a], A.R.F. Lopes[b], L.C. Ziviani[b], J.T.J. Magro[a], Ênio D. Mente[b], O. Castro-e-Silva[b], C.M. Galvão[a], and K.D.S. Mendes[a,*]

From the [a]General and Specialized Nursing Department, University of São Paulo at Ribeirão Preto College of Nursing, Ribeirão Preto, São Paulo, Brazil; and [b]Special Liver Transplantation Unit, Faculty of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brazil

ABSTRACT

The objective of the present study was to determine the anxiety and stress levels of liver transplant candidates during the preoperative period. A cross-sectional, prospective study was conducted on 52 liver transplantation candidates seen at a specialized public hospital outpatient clinic in the interior of the state of São Paulo, Brazil. Data were collected from November 2014 to April 2015 using a self-applicable questionnaire for the assessment of anxiety (State-Trait Anxiety Inventory, short version) and stress (Perceived Stress Scale), in addition to sociodemographic and clinic characterization. The mean (±SD) anxiety level detected was 23.06 ± 5.51 points, with 1.92% of the subjects showing minimum levels (0 to 12 points), 59.62% a medium level (12 to 24 points), 36.54% a moderate level (24 to 36 points), and 1.92% a severe level (36 to 48 points) of anxiety. The mean level on the stress scale was 12.10 ± 5.62 points, with 7.69% of the subjects showing high stress levels. When individuals with good and poor stress levels were compared, a significant difference was observed between them ($P = .0004$). The Spearman correlation test showed that the higher the stress, the higher the levels of anxiety ($r = 0.4258$), $P < .0001$. The present study contributes to the analysis of the mental health of liver transplantation candidates in view of the need for interventions for the improvement of anxiety and stress levels since the waiting period for the organ generates emotional changes that can affect the quality of life of the patient and the success of this complex therapeutic modality.

LIVER transplantation is considered to be the treatment of choice for patients with progressive, irreversible, and terminal liver disease that cannot be treated [1]. It is considered to be one of the most complex procedures of modern surgery because it interferes with different functions of the organism [2]. The current patient survival rate is approximately 85% during the first year after transplantation and more than 70% after 5 years [3].

The consequences of liver disease are numerous and varied, frequently leading to disability and even involving the risk of death, with their presence being a signal of poor prognosis. These changes affect the intra- and postoperative liver transplant evolution and require great effort on the part of the multidisciplinary team for their management, interfering with the social, biological, and emotional balance of the patients and their relatives [3].

Liver transplantation is a complex procedure that causes reactions in patients and relatives. The risk and benefit aspects regarding the future procedure may have an impact on the anxiety of transplantation candidates and generate stress symptoms. This is a paradoxical time between the possibility of living and of returning to a normal life and the possibility of dying. The time the transplantation team has to prepare the patient and his relatives is quite variable; however, the patients must know what to expect and familiarize themselves with the hospital, the transplantation unit, and the care they will need for the rest of their life after the surgery [3,4].

*Address correspondence to Karina Dal Sasso Mendes, RN, MSc, PhD, Departamento de Enfermagem Geral e Especializada, Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, Av. Bandeirantes, 3900 - Campus Universitário. CEP 14040-902 - Ribeirão Preto, SP, Brazil. E-mail: dalsasso@eerp.usp.br

230 Park Avenue, New York, NY 10169

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The team can offer support by keeping telephone contact available or by periodically contacting the family by telephone, or by implementing family support groups. Providing information is crucial and may contribute to minimizing feelings of anxiety and stress [5]. Holding meetings between families, patients, and the liver transplantation team can facilitate the exchange of information and answer questions, especially during the phase preceding the surgical procedure.

A search of the literature reveals an incipient production of information regarding stress and anxiety among liver transplantation candidates. Few studies have dealt with adult candidates awaiting a liver transplant from a deceased donor regarding the assessment of stress [6,7]. Some investigations have assessed the levels of anxiety in liver transplantation candidates [8,9] and others have reported the effect of anxiety and depression on the patients' quality of life after discharge from the hospital after surgery [10,11]. However, no studies simultaneously assessing stress and anxiety levels in this population have been detected, so that the present investigation can contribute a lot to the generation of new knowledge about this topic.

Stress is the reaction of an individual to an adaptation that may cause a set of physical, psychological, or behavioral symptoms. Excessive stress levels may lead to changes in health and affect the defenses of the organism, thus interfering with the adaptive responses to stress of an individual. When the adaptive behaviors are efficient, people progress to recovery, but if they fail by being ineffective, the tension state is increased, even possibly leading to stress syndrome [12]. From this perspective, liver transplantation candidates experience high stress situations due to the complexity of treatment, the waiting period for a transplant, and the repercussions of chronic liver diseases on their quality of life while they are waiting for the surgery [13].

Anxiety is an essential adaptive symptom in the presence of stressful conditions and is related to the complex sequence of reactions and stimuli involving cognitive evaluation, subjective changes, and autonomic activation to adapt to the fight for survival [14]. It is a transitory emotional reaction perceived by one's conscience, consisting of physiological and psychological factors and considered to be normal and healthy because it prepares the organism to cope with adverse situations. However, high anxiety levels may cause mental and physical changes that may influence the life of affected individuals [15].

In view of the above considerations, the assessment of stress and anxiety in liver transplantation candidates is valid and relevant because it permits us to identify factors that interfere with the quality of life of patients waiting for the transplant. In addition, assessment can provide the basis for the implementation of actions on the part of the transplantation team to relieve the signs and symptoms of these emotional changes contributing to the prevention of complications and to the treatment of patients waiting for a liver transplantation.

Thus, the objective of the present study was to characterize and measure stress and anxiety in liver transplantation candidates during the preoperative period, and to characterize the subjects under study in terms of sociodemographic and clinical variables.

METHODS

A prospective, cross-sectional design was used in this study. The study was conducted at a public general hospital in the interior of the State of São Paulo, Brazil, registered with the National Transplant System. The liver transplantation program involves ambulatory care during two weekly periods, with the liver transplantation candidates being monitored by a multidisciplinary team.

The target population consisted of candidates with a technical registration for a liver transplantation from a deceased donor who were waiting for the transplant and who were followed up at the specialized outpatient clinic. Inclusion criteria were: 18 years of age or older, being a candidate for a liver transplant from a deceased donor, and having favorable clinical conditions that would permit understanding and filling out the questionnaires for data collection. Exclusion criteria were: subjects with a preoperative course that prevented participation in the study or unable to understand the questionnaire due to lack of minimum reading and writing skills. Thus, 52 participants fulfilling the inclusion criteria during the period of data collection from November 2014 to April 2015 were included in the study.

The patients were monitored by the senior investigator during attendance at the outpatient clinic when they were informed about the present study and asked to give their consent to participate. For data collection, an questionnaire was used for the sociodemographic and clinical identification of the candidate, with the following data being recorded: name, number of patient hospital registration, age, date of birth, sex, birth place (urban or rural), marital status, religion, city and state of residence, profession, occupation, number of children, time of leave from work, schooling (years of study), family income, medical diagnosis, medications used, date of enrollment in the technical registry for transplantation, value of the Model for End-Stage Liver Disease (MELD) score, presence of diabetes mellitus and arterial hypertension, and anthropometric data. The interview was held in a private setting.

Stress levels were assessed by indirect stress measurement using the Perceived Stress Scale (PSS 10) proposed by Cohen et al. in 1988 [16] and translated and validated for the Brazilian version (BPSS - 10) by Reis et al (2010) [17]. This tool is composed of 10 items scored according to a 5-point Likert scale. The overall score, which corresponds to the sum of individual scores, ranges from 0 to 40. The higher the overall score, the higher the stress level.

Anxiety was determined using the short version of the State-Trait Anxiety Inventory scale consisting of two subscales, one related to anxiety state (STAI-S-6) and the other to anxiety trait (STAI-T-6). The anxiety state represents a transitory emotional state characterized by subjective feelings of tension and apprehension that may vary in intensity along time. The anxiety trait represents a relatively stable disposition to respond to stress situations with anxiety and a tendency to perceive a broader gamut of situations as threatening [18].

The scale was developed by Spielberger et al in the 1970s to measure two different components of anxiety, for example, state