Changes to the Quality of Life after Renal Transplantation

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Abstract

Introduction and Objectives. Estimating the quality of life in relation to the health status is a helpful tool in assessing the results and determining the efficacy of any form of treatment. The main purpose of this study is to rate the patients’ quality of life after renal transplantation. The objectives of this paper are: to describe the demographic characteristics of the included patients, to compare their auto perceived quality of life before and after kidney transplant surgery, and to find and analyze correlations between the demographic characteristics and the quality of life after renal transplantation.

Materials and Methods. This observational descriptive study was performed in a longitudinal and prospective manner. 106 patients that had been treated for chronic kidney disease through renal transplantation were included, and they were assessed before surgery, and 1, 3, 6 and 12 months after surgery. In order to evaluate them we used the Quality of Life Index - Kidney Transplant.

Results. Most of the patients are males. The quality of life scores for the four individual sub-domains follow the overall score model, slightly dropping one month after transplantation compared to the pre surgery level, then constantly rising going through all the other three assessment moments (3, 6 and 12 months after surgery).

Conclusions. This study analyzes the impact of renal transplantation on the quality of life of the chronic kidney disease patients. Our results clearly show a positive trend on the auto perceived quality of life.

Keywords:

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**Introduction and Objectives**

The research and development of new medical technologies in the area of renal transplantation has led to the increase in the number of this type of interventions all around the world. In the same time the surgical skills have been improving, and new medical equipment and new immunosuppressive drugs have gotten in use (1). But although more kidney transplants are performed, more and more patients need this therapy, so waiting lists get longer and the time necessary to find compatible donors is gradually increasing (2).

The superior results of renal transplantation regarding the health status make this a better treatment option then dialysis, the transplanted patients having a better vitality, and being able to accomplish all their daily activities (3). After a successful renal transplant, the auto perceived health status is far superior to the one during the dialysis period (4). Several studies conducted on kidney transplant patients reveal the fact that there are differences in the auto perceived health status, although no differences have been observed in the functioning of the implant or during the clinical evaluation (5). Some of these differences are determined by the socio-demographic characteristics of the patients (6, 7).

The quality of life is a multidimensional concept, comprising of different areas, including social, economic and family components. Assessing the quality of life in relation to the health status is helpful in determining the results and efficacy of any form of therapy (8).

The main purpose of this study is to rate the patients’ quality of life after renal transplantation. The objectives of this paper are: to describe the demographic characteristics of the included patients, to compare their auto perceived quality of life before and after kidney transplant surgery, and to find and analyze correlations between the demographic characteristics and the quality of life after renal transplantation.

**Materials and Methods**

*The type of the study.* This study is an observational and descriptive one, conducted longitudinally and prospectively, between the 1st of July 2014 and the 30th of June 2015. The inclusion criteria were: age above 18 years, informed consent, chronic kidney disease and recommendation for renal transplantation. The exclusion criteria were: refusal to partake, illiteracy, failure to present to all the evaluations.

*Tools used in the study.* In order to assess the health status the Quality of Life Index Kidney Transplant was used. It consists of a set of 35 items that rate the satisfaction of the patient regarding important aspects of life, and their individual importance. All the 35 questions, both for satisfaction and importance, range from 1 (very unsatisfying / not important) to 6 (very satisfying / important). A satisfaction score was then computed, averaging each answer around the “0” value, then multiplying them with the importance each patient gives to every aspect of life, and adding 15 in the end. We obtained a total score, and four individual scores: health and body functions, psychologic / spiritual, social and economic, and family (9-14).

The demographic data collected included the gender of the patients, their age, marital status, level of education and monthly wage.

Statistical analysis of the data. The collected data was then analyzed. The quantitative variables were appraised according to the distribution (Kolmogorov Smirnov test), the central indicators (median, average), and the dispersion indicators (standard deviation, minimum and maximum values). The qualitative variables were judged by their relative and absolute incidences. The total and individual scores were statistically compared, for all the five evaluation moments (before surgery, and one, three, six and twelve months after surgery) - paired t test. We also investigated correlations between the total score and the various subscales of the quality of life with all the socio-demographic characteristics included in the study (Spearman rho correlation test). The data was statistically evaluated with the SPSS 17.0 program, and the statistical significance threshold was set at 0.05.

**Results**

Of the 106 patients included in the study, 69.8% were males. The average age was 42.04 ± 10.05 years. Most of the patients had finished high school (34%), were married (67%), and had retired because of sickness (54.7%). Their declared average monthly income was 1064.09 ± 769.75 lei (table no. 1).
The demographic characteristics of the patients included in the study

<table>
<thead>
<tr>
<th>Gender</th>
<th>Males – n=74 (69.8%)</th>
<th>Females – n=32 (30.2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Average = 42.04, Standard deviation = 10.05, Median = 42.00; Minimum = 22.00; Maximum = 63.00</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>Not married n= 29 (27.4%)</td>
<td>Married n= 62 (58.5%)</td>
</tr>
<tr>
<td>Education level</td>
<td>Primary school n= 12 (11.2%)</td>
<td>Secondary school n= 5 (4.7%)</td>
</tr>
<tr>
<td>Occupation</td>
<td>Employed n= 33 (31.1%)</td>
<td>Retired at the normal age n= 11 (10.4%)</td>
</tr>
<tr>
<td>Monthly income</td>
<td>Declared n=89 Average = 1064.09 Standard deviation = 769.75 Median = 1000.00; Minimum = 11.00; Maximum = 5000.00;</td>
<td>Undeclared n=17</td>
</tr>
</tbody>
</table>

The average total score for the quality of life was 24.27 before kidney transplantation. One month after surgery we observed a nonsignificant decrease of this index (-0.28 ± 3.04, p=0.344), which afterwards started to rise, and became statistically significant at twelve months after transplant (p<0.002) – Image no. 1.

Analyzing the demographic factors in relation to the total score of the quality of life, before and after surgery, we found out that most of these factors (gender, marital status, occupation, monthly income) do not influence the patients' perception of the quality of life.

The four individual sub-scores of the quality of life follow the same trend as the total score: they slightly decrease at one month after transplant compared to the level before surgery, and then register a constant raise at every other evaluation (three months, six months and twelve months) – Table no. 2.

The health subscale and body functions negatively correlate with the age of the patients, and positively correlate with the body mass index before transplant (Table no. 3).

The Psychological / Spiritual subscale negatively correlates with the patients’ age: the greater the age is, the lower the Psychological / Spiritual score gets (Table no. 4).

The Family subscale positively correlates with the patients’ age, the level of education and the body mass index before transplant: the higher these characteristics are, the higher the Family score raises (Table no. 5).
This study shows a predominance of younger patients for this treatment option for chronic kidney disease. Which in turn reveals the high number of young patients on dialysis, and an increase in the incidence of rapidly progressive end stage kidney disease. Renal transplantation at early ages has an impact on social, professional and economic activities for the patients, and this decreases the costs for the patient and his family, and for the whole society in general.

The perception of the patients on the health status is not influenced by most of the socio-demographic characteristics, confirming the results of other similar studies (15). The patients’ age negatively correlates with the psychological and spiritual aspects, and both the education level and the age positively correlates with the family aspect. This reflects that younger patients react better to fear and other strong emotions, creating strategies to face the stress related to illness and surgery more than elderly patients.

Comparing the average total score of the quality of life and the average individual sub-scores clearly show a significant increase in the quality of life after renal transplantation. The somewhat lower values registered at one month after surgery can be explained by the fact that the patients are mostly admitted for this period and are still under the influence of the postoperative stress and the adverse effects of the immunosuppressive drugs.
Conclusions

This study analyzes the impact of renal transplantation on the quality of life of the chronic kidney disease patients. Our results clearly show a positive trend on the auto perceived quality of life.

References