Quality of Life in Patients Suffering from Parkinson’s Disease and Multiple Sclerosis

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Introduction: Multiple sclerosis (MS) and Parkinson’s disease (PD) are chronic diseases with unpredictable course causing progressive physical disability and cognitive decline, and broadly affecting the patient’s life, social interaction, recreational activities and overall life satisfaction. Goals: To examine the quality of life of patients with PD and MS, and investigate the existence of differences between the degree of impairment to the quality of life in PD and MS. Methods: A prospective study was conducted at the Neurology Clinic, University Clinical Center in Tuzla in the period from December 2005 until May 2007. The study included subjects with confirmed diagnosis of MS and PD. We analyzed 50 patients with PD and 50 patients with MS, with disease duration 1-5 years without any or with mild cognitive impairment. Quality of life was assessed using the SF-36 scale comprised of 36 questions in eight health profiles. Results: There was no significant difference in gender frequency in our study sample of patients with PD, while in MS group of patients there were a significantly more females. The average age of the PD patients was 63.18±10.42, and in patients with MS 37.4±8.65 years. In our study the relative influence of PD and MS on quality of life was similar after controlling the duration of the disease, and there were some differences in relation to the degree for clinical disability. Subjects showed reduced QoL independently of the duration of illness (patients with PD in 88% of cases, and multiple sclerosis in 84% of cases). There are significant differences in the occurrence of poor quality of life in patients with PD were in advanced clinical stages of disease for the physical, mental dimension of the SF 36 and the total score. Respondents in stages III-V of the disease were 5.23 times (23%) likely to experience reduced QoL compared to those with less physical disability. In subjects suffering from MS reduced QoL was not related to the degree of clinical disability in physical, nor the mental dimension of the SF 36 and the total score. These results in MS patients can be partially explained by the small sample size, on the other hand it is possible that patients with MS, although they have greater physical disability seen as a very difficult diagnosis which determines the entire life. Conclusions: Patients who are treated for PD and MS had a high degree (>80%) of reduction of the overall quality of life, and there were no significant differences in the extent of QoL reduction between these groups of patients. Reduced quality of life in patients with PD is observed during severe stages of the disease, while the QoL does not depend on the degree of clinical disability in MS patients. In both groups of patients the appearance patients reduced QoL occurs during severe stages of the disease, and there were some differences in relation to the degree for clinical disability. Subjects showed reduced QoL independently of the duration of illness (patients with PD in 88% of cases, and multiple sclerosis in 84% of cases). There are significant differences in the occurrence of poor quality of life in patients with PD were in advanced clinical stages of disease for the physical, mental dimension of the SF 36 and the total score. Respondents in stages III-V of the disease were 5.23 times (23%) likely to experience reduced QoL compared to those with less physical disability. In subjects suffering from MS reduced QoL was not related to the degree of clinical disability in physical, nor the mental dimension of the SF 36 and the total score. These results in MS patients can be partially explained by the small sample size, on the other hand it is possible that patients with MS, although they have greater physical disability seen as a very difficult diagnosis which determines the entire life. Conclusions: Patients who are treated for PD and MS had a high degree (>80%) of reduction of the overall quality of life, and there were no significant differences in the extent of QoL reduction between these groups of patients. Reduced quality of life in patients with PD is observed during severe stages of the disease, while the QoL does not depend on the degree of clinical disability in MS patients. In both groups of patients the appearance patients reduced QoL does not depend on the duration of the disease. Keywords: Quality of life, Parkinson’s disease, multiple sclerosis.

1. INTRODUCTION

Quality of Life (QOL) is the basic paradigm of modern medicine and becomes a relevant measure of clinical practice (1). Assessment of quality of life can be useful to describe the severity of the disease, to monitor treatment and evaluate the effect of new therapeutic procedures. World Health Organization (WHO) gave the following definition of quality of life: “quality of life is the individual’s perception of the patient’s position in life, in terms of cultural and value system in which they live and in relation to their goals, expectations, standards and the occupations” (2).

Multiple sclerosis (MS) is a chronic inflammatory, non communicable, progressive multi focal demyelinating autoimmune disease of the central nervous system (CNS) (the white mass of the brain and spinal cord), which may manifest by various neurological symptoms. It is the most common disease of the CNS which leads to disability in young people in the developed world, and our country. Predominantly affects young adults in the most productive age, between 20 and 40 years, and rarely under 15 and above 60 years (3).

Parkinsonism is a clinical syndrome that is characterized by tremor, akinesia/bradykinesia, rigidity and disorder of postural reflexes. This syndrome can be caused by various conditions, and Parkinson’s disease (PD) is an idiopathic entity of this syndrome (4).
3. PATIENTS AND METHODS

The study was prospective in character and conducted at the Neurology Clinic, University Clinical Center (UCC) Tuzla in the period from December 2005 until May 2007. The study involved subjects with a definitive diagnosis of PD that satisfy current criteria for the diagnosis of PD (clinical criteria for Ransmayr) and MS (revised McDonald criteria) (5,6). We analyzed 50 patients with PD and 50 patients with MS with disease duration from 1-5 years.

Clinical assessment instruments were:
- Hoehn and Yehr scale ratio of Parkinson’s disease (7);
- Extended score of disability degree in patients with multiple sclerosis (EDSS) (8);
- Scale of quality of life (SF-36 modern health survey) (9);
- Mini Mental Status (MMSE) (10).

Hoehn and Year ratio of the Parkinson’s disease divides disease into five phases. In the first phase, the symptoms are mild, single until phase five when they are severe, double-sided, and when the patient requires constant care of another person. Subjects were divided into two groups: the first group of subjects in phase I and II disease, while another group of respondents were classified in the III, IV and V stages of the disease.

Extended score for assessment of the disability degree quantify disorder of individual functional systems (pyramidal system, cerebellum, brain stem, sensibility, intestine and urinary bladder, visual system, the cerebral system, functions and other functions). Based on the functional state of the system the degree of disability is made – EDSS (range of scores from the 0.0-normal neurologic findings, a maximum score of 10-death). According to the EDSS the subjects were divided into two groups: one group of subjects with EDSS 0-5.0 and the second group of subjects with EDSS 5.5-10.

SF-36 scale consists of 36 questions which were divided into eight areas (physical function, limitations of physical function, bodily pain, social functioning, general mental health, emotional limitations, vitality and fatigue, general feeling of health). These eight areas are united into two overall dimensions of quality of life and into physical dimensions and the dimensions of mental health and then the total SF-36 scores. The total score is calculated by a computer program (SF-36.EXE) and ranges from 000-100 (up to 25-poor quality; 26-50 medium quality; 51-75 moderately good and over 75-excellent quality of life) (11). During the processing of data was observed physical health, mental health, and total SF-36 scores. According to the SF-36 score the subjects were divided into two groups: subjects with poor and moderately poor score (score of 00-50) and respondents with an average good and excellent single (51-100).

The subjects were free of cognitive impairment or low cognitive impairment as assessed with the MMSE.

In analyzing the data obtained were used standard statistical parameters: mean, standard T-test and chi-square test (X²-test) to determine the significance of the difference, Fisher’s exact test, a computer program SF-36.EXE, odds ratio. The value of p<0.05 was considered as significant.

The study was conducted with the approval of the Commission’s Ethics Committee of the UCC Tuzla.

4. RESULTS

By consecutive selection of patients with PD (50 patients) 54% are women and 46% men. The average life expectancy was 63.18±10.42 years. In the group of MS patients consecutively selected women were 80% and 20% of men. The average age was 37.4±8.65 years. There was a statistically significant difference in average age between patients with MS and PD (t=13.5, p<0.0001).

In the first group of subjects (disease duration 1-3 years) was 68% patients with
PD and 64% of patients with MS, while in the second group (disease duration of 4-5 years) was 32% patients with PD and 36% of patients with MS. It was found that in the first group of subjects with PD (stages I and II disease) was 58%, while the second group (stage III-V disease) 42% of respondents. In the first group of subjects with MS (EDSS score of 0-5.0) was 88%, while the second group (EDSS score 5.5-10) 12% of respondents.

In the group of patients with PD 88% of them had impaired the overall quality of life, while 12% had an excellent quality of life. The most common age group 60-69 years (44%) had the greatest impairment to the overall quality of life. There was no statistically significant difference in the occurrence of poor quality of life in relation to duration of disease (p=1.0). The emergence of the poor quality of life significantly different in the first (phase I-II) and the second group (stages III-V) (p=0.02). The chance for occurrence of poor SF-36 score was 5.2 times higher in subjects in whom the disease is in stage III-V (Figure 1).

Total SF-36 scores, as an indicator of quality of life was reduced in 84% of persons with MS, while 16% of them had an excellent quality of life. The age group of patients with MS from 30-39 years had the highest (62%) impairment to the overall quality of life. There was no statistically significant difference in the occurrence of poor quality of life in relation to the degree of clinical disability (p=0.3) (Figure 2).

Calculating the odds ratio we obtained results that the poor and moderately poor SF-36 scores are 4.5 times more frequent in the group of patients with EDSS 5.5-10. The quality of life by SF-36 score was impaired regardless of the duration of the disease in patients with MS (p=0.1). Low and moderately low SF-36 score was 3.3 times more frequent in the group where the disease lasts longer (4-5 years).

Quality of life of people with MS and PD as measured by SF-36 scale showed impairment in all eight domains: physical function, physical limitations, physical pain, general health, vitality, social function, emotional limitations and mental health. Patients with PD and MS had a similar profile in terms of viability (42 and 40 points), limitations in the emotional category (51 and 49 points) and mental health (48 and 51 points). Patients with multiple sclerosis had a better score for physical function, physical limitations, general health and social function (for each subscale difference of 8 points), and subjects with PD had a better score for physical pain (difference of 7 points) (Figure 3).

There was no statistically significant difference in the degree of the quality of life impairment in relation to physical and mental functioning of the overall SF-36 scores in these two neurodegenerative diseases (p=0.8).

5. DISCUSSION

When comparing the quality of life of people with MS and PD was found that the impairment of the quality of life was approximately the same in both groups of respondents (88% of respondents with PD and 84% of those with MS have impaired quality of life).

In the study by Riaz and associates (12) the relative impact of PD and MS on quality of life was similar after controlling the duration of illness and other demographic variables. In this study the relative influence of PD and MS on quality of life was similar after controlling the duration of the disease, and there were some differences in relation to the degree of clinical disability. Respondents suffering from PD showed impairment to the quality of life independently of the duration of the disease while there was no significant difference in the occurrence of poor quality of life in patients with clinical advanced stage of disease for physical, mental dimension and the total SF 36 scores (p<0.05). In subjects suffering from MS was found that the appearance of poor quality of life does not depend on the length of the disease, nor on the degree of clinical disability in physical, mental dimension and the total SF 36 scores (p>0.05). This result related to MS is influenced in part by a small sample, on the other hand it is possible that patients with MS, although they have greater physical disability seen as a very difficult diagnosis to seal the entire life.

These results were confirmed in a study by D’Alisa and associates (13) which show that in patients with MS quality of life is determined by personal disposition, regardless of neurologic or functional disability.

On the other hand, according to Leger and associates (14) acceptance of illness (disability) plays an important role in psychological distress in people with physical disabilities. This study further found that the two groups had similar disease profile in terms of viability (42 and 40 points) and limitations in the emotional category (51 and 49 points) and mental health (48 and 51 points). Patients with MS had a better score for physical function, physical limitations, general health and social function (for each subscale difference of 8 points for all comparisons) (p<0.05), while respondents with PD...
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had better scores for bodily pain (difference 7 points) (p>0.05).

Study by Riaz and associates (12) shows that two groups had similar disease profile in terms of physical constraints (19:18 points), bodily pain (54 and 56 points), general health (43 and 43 points), vitality (34 and 35 points) and social function (49 and 51 points) (p>0.05 for all comparisons). In this study, patients with MS had lower scores for physical function (difference of 11 points, p<0.05). The biggest difference between the two groups was in terms of limited-emotional category, where the group with multiple sclerosis had significantly better scores than the PD group (difference 18 points, p<0.005). Patients with MS and PD had similar health profiles in six of eight areas, but the score in those with MS was lower in terms of physical function and better score in the field of mental health, which could be explained to the subjects with MS, adjust psychological demands of illness (12).

In our study, subjects suffering from PD have poorer SF-36 scores for all areas except for physical pain which is consistent with the results of the study by Schrage and associates (15). Patients with PD and MS have similar health profiles in all eight areas (no significant differences in the profiles), but slightly lower scores in those with a PD in terms of physical function, physical limitations, general health, social function and mental health, a better in terms of bodily pain and slightly better in terms of vitality and emotional limitations.

Although we did not find statistically significant difference in the degree of the quality of life impairment observed among groups of respondents, however it can be concluded that the poorer quality of life in patients with MS. Onset of disease in MS patients was significantly earlier than the beginning of the PD. Age group 30-39 years was most often in people with MS as the most productive part of society, compared to affected by PD, where most present respondents aged 60-69 years, when because of age, regardless of disease specific dimensions the quality of life is certainly impaired.

Shortcomings of our study are small sample size and the need to monitor the quality of life for an extended period of time when we would probably get more precise data on the impairment to the individual dimensions of quality of life. The contribution of the study is that for the first time in our conditions is given importance to evaluation the quality of life in order to identify and reveal areas where the disease affects that are not apparent by clinical examination.

6. CONCLUSION

Patients who are treated due to the PD and MS have a high degree (>80%) of impairment in the overall quality of life without significant differences in the degree of this impairment between these groups of patients.

Poorer quality of life has patients suffering from PD in severe stages of the disease, and the quality of life does not depend on the degree of clinical disability in MS patients.

In both groups of patients the appearance of poorer quality of life does not depend on the duration of the disease.

REFERENCES