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A STUDY ON QUALITY OF LIFE IN PATIENTS WITH CATEGORY-II PULMONARY TUBERCULOSIS IN A CENTRAL INDIAN DISTRICT

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Abstract

Background: Pulmonary Tuberculosis (PTB) is a contagious, airborne infection that develops when M. tuberculosis infect the lungs. PTB is totally curable infection. However, an early diagnosis and antibiotic treatment is needed to get the desired outcomes. Despite availability of treatment, stigmatization and negative emotions resulting from the illness could hamper the psychological well-being of patients which may eventually result in poor compliance, work absenteeism thus effecting economic productivity and prosperity.

Methods: This was a cross-sectional study conducted over a period of one year. A total of 231 category II DOTS patients were recruited for the study. Quality of Life (QOL) was assessed after 3 months of the intensive phase. For QOL WHO based QOLBREF was used.

Results: In the present study patients scored lowest in the psychological domain (7.82 ± 1.86) followed by physical (8.21 ± 1.98).

Conclusion: HRQOL is significantly reduced in patients with PTB.

1. INTRODUCTION:

Tuberculosis (TB) is an airborne infectious disease caused by Mycobacterium tuberculosis and is a major cause of morbidity and mortality, particularly in India.[1] TB remains a worldwide public health problem despite the fact that the causative organism was discovered more than a century ago.[2] The vast majority of TB deaths are in the developing world.[3] Globally, one-fourth of all TB cases occur in India.[3] These deaths depend on prevailing social and economic factors such as poverty, illiteracy, poor standard of living etc.[4] According to the WHO, Quality of life (QOL) is defined as an individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.[5] This definition considers individuals' satisfaction on their physical, psychological, social relationships, environment, and spiritual aspects of their life.[5]

Constitutional TB symptoms especially loss of weight, loss of appetite, fever, fatigue and body pain can adversely affect the patient's perception of well-being and happiness.[6] In case of pulmonary tuberculosis (PTB), the patients usually present themselves with a history of chest symptoms such as cough (productive or non-productive), chest pain and in some cases hemoptysis.[7] TB has a substantial impact on the overall QOL even after the start of anti-tubercular drugs.[4] The injectable antibiotics which are used in the intensive phase of category II DOTS treatment can further hamper the quality of life and wellbeing of patients.[8] Keeping in mind the chronic nature and social stigma associated with the illness, reduced community participation, social and personal lives of patients leading to a diminished QOL. Therefore, the present study was conducted to assess the effects of active PTB on QOL.

2. MATERIALS AND METHODS

This study was conducted in the Department of Pulmonary Medicine, RD Gardi Medical College, Ujjain. It was a cross-sectional study which was conducted over a period of one year, from April 2016 to March 2017. Written informed consent was obtained from each patient. Our study subjects were

the category-II PTB patients attending the Department of Pulmonary Medicine, RD Gardi Medical College, Ujjain. Confirmation of diagnosis of PTB was based on specific constitutional symptoms and signs, radiological examination (x-ray chest), examination of pleural fluid and sputum examination for acid fast bacilli. All the cases were interviewed for sociodemographic parameters like age, gender, employment, educational level, marital status, and socioeconomic level. The study was approved by ethical institutional committee RD Gardi Medical College, Ujjain. QOL was assessed by WHOQOL-BREF Scale.[9] The WHOQOL-BREF instrument comprises 26 items, which measure the following broad domains: physical health, psychological health, social relationships, and environment.[9] The WHOQOL-BREF is a shorter version of the original instrument that may be more convenient for use in large research studies or clinical trials.[9] Statistical analysis: Clinical variables of study subjects were analyzed using the SPSS version 20.0. Domain scores in the WHOQOL-BREF were scaled in positive direction with higher score denoting good QOL. Mean scores of items within each domain were used to calculate the domain score. We used t-test to compare means between groups. QOL was treated as continuous variable. Relationship between two categorical variables was analyzed using chi-square test. Two-sided p-values were reported and p-values less than 0.05 were taken as statistically significant.

3. Results:

During the one-year study period, a total of 231 patients who were diagnosed with pulmonary TB from the department of Pulmonary Medicine were screened using inclusion and exclusion criteria. However, 20 patients were excluded using the exclusion criteria.

Out of total 210 patients of PTB included in the study, 121 (57.6%) were males rest (89) were females. Most patients were < 40 years (mean age 35.19 ± 10.25 years), were Hindu and married. Almost one third (31.2%) of the patients were illiterate. The mean per capita income per month of the study subjects was Rs. 6434 ± 370.

Table 1 represents the socio-demographic features of study participants. The results of quality of life are detailed in table 2. Mean QOL scores by domains of QOL.

4. Discussion

A patient needs all kinds of support when they are treated for a chronic disease including medical, social, economical and psychological support. Our study highlights the quality of life of category II DOTS patients. This was done to identify if patients have poor self-perception and social exclusion. It has been seen that apart from physical symptoms, TB patients face various problems that are social and economic in nature. Therefore, for a comprehensive assessment of patient's health status, it is essential to consider the overall impact of TB on health and patient's perception of wellbeing besides routine clinical, radiological and bacteriological assessments.[10] The long duration of treatment especially for category-II DOTS affects the QOL of patients. TB patients had significantly lower mean scores for overall QOL and its domains. The worst affected were psychological domain followed by the physical domain. In our study, physical domain of QOL had a mean score of 8.21 (SD 1.98) and psychological 7.82 (SD 1.86), social relationship 9.10 (SD 1.76) and environmental mean domain score of 10.34 (SD 2.10).

Table 1: Socio-demographic characteristic of study participants (n= 210)

Study variable	n	%
Gender		
Male	**121**	**57.6**
Female	**89**	**42.3**
Age (in years)		
18-≤ 30	68	32.4
31-≤40	81	38.6
40 and more	61	29.0
Mean	35.19 ± 10.25	
Occupation		
Housewife	43	20.4
Labor	45	21.4
Agriculture	59	28.1
Service	23	11.0
Others	40	19.0
Educational qualification		
Illiterate	67	31.9
Literate without formal education	92	43.8
School-educated	35	16.7
College educated	16	7.6
Marital Status		
Married	154	73.3
Unmarried	44	20.9
Separated	12	0.057
Household food security		
Food secure	140	66.7
Insecure	70	33.3

Table 2: Domain specific scores for WHOQOL-BREF among study participants after 3 months of DOTS Treatment (n=210)

Domain	Mean (SD)	Range	P value
Physical	8.21(1.98)	5-16	0.058
Social	9.10 (1.76)	5-17	0.63
Psychological	7.82 (1.86)	4-18	0.04
Environmental	10.34(2.1)	4-20	0.75

Results similar to our study have also been observed and reported by other researchers e.g. Deribew et al[11] and Dhuria M et al[12] with physical domain to be most affected followed by the psychological domain. In the neighbouring country of China, a study conducted on TB patients using SF36 questionnaire also showed that health related QOL declines in patients having TB with physical scales the most affected.[13] The most probable reason for poor physical domain scoring can be attributed to diminished physical activity caused by inadequate tissue oxygenation.[14] This is especially true for country like ours, because of substantial number of patients live in villages, or for people of lower SES, for whom physical activity is directly linked to family welfare and financial stability.

TB is a disease with social implications due to the stigma, isolation. Financial constraints, rejection in community, fear of dying and disease transmission attached to it which is evident from the lower scores of cases in psychological and social domains. This is in coherence with the other studies which point out that TB affects all the predicted domains of QOL. i.e psychological, general health perception and social role functioning. The environmental domain relates to the sense of safety, security, home environment, transport and financial security which was negatively affected in TB patients as our study results.

Although normative data for Indian adults are not available, some studies from India have reported WHOQOL-BREF scores in small numbers of healthy subjects. In one study, the physical, psychological, social relationships and environment domain scores (±SD) were 71.1 ± 14.2, 63.0 ± 13.6, 68.8 ± 14.6 and 61.3 ± 12.8, respectively[14], while in another they were 75.6 ± 8.5, 73.0 ± 10.4.88.0 ± 12.3 and 69.5 ± 12.3, respectively.[15] Our final scores therefore appear to be largely similar to those found in healthy Indian adults, which indirectly suggests that anti-tuberculosis treatment improved patient status to near pre-morbid level in most cases. However, our study does have certain shortcomings. HRQOL was only evaluated in patients with newly diagnosed pulmonary TB and patients with other forms of TB including multidrug resistance PTB were not included. Assessment at the end of treatment was not done which should have revealed residual symptoms.

We concluded that HRQL is reduced in patients with category II PTB, and that it likely to improve after the completion of the intensive phase of treatment. The care givers of the patient should be educated to provide social support to that patient to feel excluded. Also, special focus on reduction of stigmatization should be done using the mass communication. Inclusion of psychological support in the management of PTB should be considered as well as interventions to reduce the stigmatization related to PTB to improve the overall treatment outcome. It is expected that monitoring of adherence during this treatment phase should be implemented to ensure that patients continue with their medication regime as many may perceive this improvement in their HRQOL as a sign of cure.

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