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Research article

Study on quality of life of chronic kidney disease stage 5 patients on hemodialysis

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ABSTRACT

Background and Objectives: Chronic Kidney Disease (CKD) is a worldwide public health problem with increasing incidence and prevalence. The causes of CKD may be diabetes mellitus, hypertension and polycystic kidney disease. The main objective of this study is to study quality of life of chronic kidney disease stage 5 patients on hemodialysis.

Material and Methods: This is a prospective cross sectional study conducted at National Academy of Medical Sciences, B & B Hospital and Blue Cross Hospital, Kathmandu, Nepal on 50 CKD stage 5 patients on hemodialysis. Quality of life among hemodialysis patients was studied using Short Form-36. The result was obtained by comparing the patient's physical, social and mental status at the beginning and conclusion of a 2 month period. The data was analyzed using the software Statistical Package for Social Sciences (SPSS for Windows version 16).

Results: Out of the total 50 patients on hemodialysis, 32 were male (64%) and 18 were female (36%) with mean and median age of patients of 47.14 ± 16.65 and 48.50 years respectively. Out of eight domains studied, energy level, feeling of happiness with life and thought of full energy on self and worning out of life and tiredness perception was found to be equal on pre and post stage. Physical functioning was found to be decreased. Patients on hemodialysis reported improvements in nearly all aspects of general functioning and psychological well-being.

Conclusion: This result demonstrates that there were several changes in Quality of life. Hemodylasis improves the Quality of life however, there was significant decrease in physical functioning, role limitation due to physical ill health, role limitation due to decreased emotional wellbeing, and reduced general health.

***Keywords**:* Chronic kidney disease, Hemodialysis, Quality of Life

INTRODUCTION

Kidney disease is a worldwide public health problem, with increasing incidence and prevalence. The treatment and management of kidney disease is expensive and often outcomes are poor [1]. CKD is defined as kidney damage or glomerular filtration rate (GFR) <60 mL/min/1.73 m^2 for three months or more, irrespective of the cause. Kidney

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damage in many kidney diseases can be ascertained by the presence of albuminuria, defined as albumin-to-creatinine ratio >30 mg/g in two of three spot urine specimens [2]. Kidney related health problem has been emerging as a major public health problem in Nepal in recent years [3].

Monitoring a patient's functional status and state of well-being, together known as quality of life (QoL) measurement is of particular importance in patients with end-stage renal disease (ESRD), because the physical debility experienced by patients with uremia can be insidious and have grave consequences [4]. Chronic kidney disease is invariably associated with decreased health related quality of life (HRQoL), and there is a correlation between the magnitude of the effect on HRQoL and glomerular filtration rate. The most affected HRQoL areas are work and leisure, family life, and sleep and rest. Although an adequate treatment of patients during the predialysis stage may slow the progression of CKD and is recognized as an important factor of morbidity and mortality of kidney patients, the start of dialysis treatment is the patients' turning point in the concept of quality of life. They shift from a situation of "normal life" to a state of "mortal danger" or "life without health" that requires dialysis to stay alive [5]. QoL measurements are based on a patient's subjective sense of well-being and are commonly used as an important clinical measure for studying the benefit of medical treatments for patients on maintenance hemodialysis (MHD) [6].

MATERIALS AND METHODS

Design of the study: This is a prospective cross sectional study conducted at National Academy of Medical Sciences (Bir hospital), B & B hospital and Blue Cross hospital, Kathmandu, Nepal.

The quality of life is the best way to measure the treatment outcome of the dialysis patients as dialysis does not cure the disease but only maintains the normal physiology of the patients. So the outcome depends on multiple factors like the physical condition, socio-economic condition and psychological factors of the patients and the assessment of outcomes before and after dialysis is best carried out using the quality of life scale SF-36. The SF-36 is a multi-purpose, short-form health survey with only 36 questions. It yields an 8-scale profile of functional health and well-being scores as well as psychometrically-based physical and mental health summary measures and a preference-based health utility index. It is a generic measure, as opposed to one that targets a specific age, disease, or treatment group. Accordingly, the SF-36 has proven useful in surveys of general and specific populations, comparing the relative burden of diseases, and in differentiating the health benefits produced by a wide range of different treatments [7, 8, 9, 10, 11]. The main objective of this study is to study quality of life of chronic kidney disease stage 5 patients on hemodialysis.

Study period, Sample and Sample size: The study was done on hemodialysis patients at the mentioned hospitals during the period from 1st March 2011 to 30th August 2011. The total sample size was 50.

Inclusion criteria: Chronic kidney disease stage 5 patients on hemodialysis for more than one year were included. Stage 5 is the stage of kidney failure where glomerular filtration rate (GFR) is less than 15

mL/min/1.73 m^2 or the patient is on dialysis [12].

Study procedure: All patients undergoing dialysis for more than one year were included in the study. Data was collected using a questionnaire that included age, gender, location, and any associated co-morbidities.

Pre testing: Pre-testing was done in 5 patients (approximately10% of targeted sample). After analyzing the results required changes were made in the data collection sheet.

Ethical consideration: Informed consent was taken from the institutes where the study was conducted after describing the clear purpose of the study. Ethical approval was obtained from department head of the institute. Social and cultural values were respected and information was collected after obtaining informed consent from patients

Data analysis and interpretation: The data was analyzed using simple statistical measures like percentage, mean, and standard deviation. The comparison of data and significance testing was done by paired t-test with a confidence interval of 95%. All the analysis was carried out using the software Statistical Package for Social Sciences (SPSS for Windows version 16).

RESULTS

Patient demography: The demographic data collected included age, gender and location. Figures 1 and 2 show age, gender, and location of the patients included in the study.

Outcome of hemodialysis: Among the total patients, 42 (84%) patients were on continuous hemodialysis, 5 (10%) patients went for kidney transplantation and 3 (6%) patients died.

Figure 1: Location of Patients

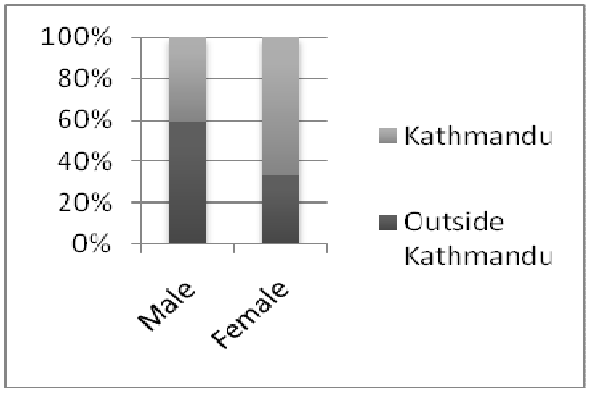
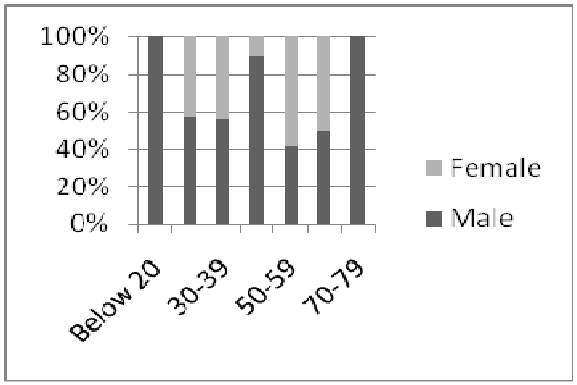


Figure 2: Age and Sex distribution of Patients



Quality of life: The result was obtained by comparing the patient's physical, social and mental status at the beginning and conclusion of a 2 month period. The statistical tool used for comparison was two tailed test at 95% confidence interval. The result from the present study shows that, there was a slight decrease in the physical functioning of the individuals. Role limitation due to physical health was slightly decreased while role limitation due to emotional problems was decreased significantly. Energy fatigue level was equal while emotional wellbeing level was slightly increased. Social functioning was same before and after 2 month period. Pain

level and general health condition decreased at the end of the 2 month study period (fig. 3).

There was decrease in the general health condition. The reduction of general health signified that patient perceived s/he may become sick earlier than others. Without doing hemodialysis, feeling of being less healthy, thought of existing health getting worse was identified in the patients on hemodialysis. Patients on hemodialysis reported improvements in nearly all aspects of general functioning and psychological well-being. There was a statistically significant decrease in physical functioning, role limitation due to physical ill health, role limitation due to decreased emotional wellbeing, and reduced general health.

Studies using the SF-36 suggest that scores in the range of 2 to 3 points on the physical and mental health summary scores (equivalent to 0.2 to 0.3 SD units) and 5 or more points for the individual subscale scores are likely to be clinically important. Changes that were 2 to 3 points greater, suggested that they are likely to be noticeable and meaningful to patients on dialysis [13]. For example, 49% of patients on peritoneal dialysis (PD) and 54% of hemodialysis (HD) patients reported moderate or severe financial problems at baseline, whereas 41% of PD patients and 54% of HD patients reported such problems at 1 year. It should be noted, however, that there were substantial differences in only a few of the domains. Patients on HD would be expected to have more problems with pain (e.g., needle sticks) and dialysis access [14].Patients on PD would have more problems with sleep and body image but greater ability to travel and work and better financial status.

The availability of social support can affect both survival and health related QoL of dialysis patients. Perceived social support had been independently and positively associated with a better perception of illness, life satisfaction, and feeling about life in general [15]. Surprisingly, it was found that living alone independently predicted a better score. Better self-assessed mental status of a patient on maintenance dialysis living alone may partially be due to absence of the difficulties involved in coping with family responsibilities and increased dependence [16]. The site selected for the purpose of this study was only three. The sample size was not large enough. Similarly because of small sample size and only three sites, the result obtained cannot be generalized.

DISCUSSION

Out of the total 50 patients on hemodialysis, 32 were male (64%) and 18 were female (36%) with mean and median age of patients of 47.14 ± 16.65 and 48.50 years respectively. Out of eight domains studied, energy level, feeling of happiness with life and thought of full energy on ownself and worning out of life and tiredness perception was found to be equal on pre and post stage. Physical functioning was found to be decreased. There was decrease in roles due to emotional approach in the study. There was significant decrease in activities like time taken for doing activities, performing fewer activities than two months ago and becoming careless in doing work due to emotional reasons. Emotional wellbeing was slightly increased which indicates that patients on hemodialysis were becoming less nervous. Similarly, they were happy and enjoying peaceful life. Social functioning was found equal in the study period. It showed that the time spent on social activities and the enjoyment and

satisfaction that they used to get from socialization was at the same level. The magnitude of pain and interference of pain in performing other activities was found to be slightly decreased. It showed that the emotional wellbeing and social functioning was not disturbed due to pain. There was decrease in the general health condition. The reduction of general health signified that patient's perception of becoming sick earlier than others was in existence. Without doing hemodialysis, feeling of being less healthy, thought of existing health getting worse was identified in the patients on hemodialysis. In the present study, patients on hemodialysis reported improvements in nearly all aspects of general functioning and psychological well-being.

CONCLUSION

This result demonstrates that there were several changes in Quality of life. Hemodylasis improves the Quality of life however, there was significant decrease in physical functioning, and role limitation due to physical ill health, role limitation due to decreased emotional wellbeing, and reduced general health.

The study was conducted at National Academy for Medical Sciences, B & B hospital and Blue Cross hospital involving a total population of 50 patients only. So, the results obtained from this study cannot be generalized. For more accurate prevalence of renal failure and its association with other diseases, quality of life of dialysis patients, the study should be conducted in the whole country and sample size should be large. Assessment of quality of life and functional status can have many applications in clinical care of patients: estimating prognosis, evaluating treatment options, monitoring disease and/or therapy, and in identifying problems.

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