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“Retrospective Cross Sectional Observational Study to Evaluate the Mean Cost of Illness & Economic Domain of QOL in CKD Patients at Regional Referral Hospital in Nasik, India”



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ABSTRACT

Globally, CKD is the 12th cause of death and the 17th cause of disability, respectively. Eighty percentage of chronic disease deaths worldwide occur in low and middle income countries. (WHO Geneva 2005). This observational study was done to gain the information on mean cost of illness of CKD patients & also to assess economic domain of quality of life of CKD patients & also the comparative treatment expenditure on dialysis patients & non-dialysis patients admitted to Regional Referral Hospital. The data were collected from the case records & interview with the patients & patient's companion and it was filled in case record form on paper. The Pharmacoeconomics of this observational study indicates the burden of Cost of Illness in CKD patients directly & indirectly. 63% of CKD patients have more cost of illness (both direct & indirect) per month than their monthly family income. Only 30% of CKD patients have less cost of illness (both direct & indirect) per month than family income. There was an association between dialysis & increase in the cost of illness. 62.5% Non-dialysis patients & 9.37% Dialysis patients have below a thousand rupees direct cost of illness. As far as concerned with the indirect cost of illness 85.18% of the Non-dialysis CKD patients have Rs. 0-1400 per month expense while only 40.62% of the on Dialysis CKD patients have that per month.



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INTRODUCTION

Chronic kidney disease (CKD) is an important, chronic, non-communicable disease. Epidemic that affects the world, including India. (Agarwal SK et. al. 2005). It is now well recognized that the prevalence of CKD is increasing all over the world. The global annual growth of number of ESRD patients is reported at 7%.

It is stated, CKD is becoming a major public health issue worldwide and an important contributor to the overall non-communicable disease burden. (Jha V *et.al*, 2012). For CKD patients, cost of illness is increasing nowadays. So, it is need of the time to evaluate mean cost of illness & economic domain of quality of life. Pharmacoeconomics measures the cost of illness, which is the evaluation of the load or burden of a disease. (Larg A *et.al*, 2011).

Theory states, the cost of illness analysis includes identification and evaluation of direct and indirect costs due to disease. Direct costs include diagnosis and treatment of disease with ancillary treatment (rehabilitation, medical devices and long-term care). Indirect costs include patient's lost wages, transportation, (food), and care giver's cost. (Sharma P 2006).

MATERIALS AND METHODOLOGY

The study was started after approval by IEC, UDIRT & Regional Referral Hospital, Nasik. We had screened OPD patients & first informed the eligible and caregivers about the study. As such, participants had been recruited from the Regional Referral Hospital, Nasik. A total of about 70 OPD patients had been screened & 59 recruited. Data collection was done with the help of standardized questionnaire.

We followed each subject's past 1 month medical records and laboratory investigations. The questionnaires provided information on resource consumption, costs and care related to CKD. Costs had been calculated per patient as the mean costs over the 1-month observation period. The data had been recorded in local currency.

Direct costs for diagnosis and treatment of disease including ancillary treatment (rehabilitation, medical devices, and long term care) had been determined by interviewing patients & from their prescriptions. Consultation cost i.e. fees paid per visit, number of visits by subject and caregiver together or separately was calculated to assess money spent on consultation on an average visit.

Money spent on medication for 1 month had been calculated. Dialysis cost i.e. expenditure of money & time by patient on each dialysis session had been determined. And average monthly cost for dialysis had been evaluated. An indirect cost which includes patient's lost wages, transportation, (food), and care giver's cost.

Lost wages: It included patients lost of wages per month due to CKD. Subjects, who were housewives, students or unemployed with no clear income, notional income had been taken as Rs 100 per day.

For doing paid works, hourly income had been calculated keeping average work time of 8 hours per day, 6 days a week. Total time spent in caregiving in hours per month was then multiplied by hourly income to obtain monthly income loss.

For transportation cost, the average cost of travelling from home to hospital & return back per month was calculated. This was determined by keeping public transport fare (MSRTC bus) as default. The sum of all the fore mentioned costs had been calculated for each patient and an average was found out. The idea was to find an approximate cost of illness for the region where the study was conducted. Economic domain of quality of life was determined from the information regarding the working status & hours off work. Classification & summarization of all this collected data was done. By using this per patient data, we had evaluated the average cost.

OBSERVATIONS & RESULTS

Cost of illness of CKD is found to be burden to the patients & also family, especially the CKD patients belonging to below poverty line & suffering from stage II – stage V CKD. 39% (23 patients out of 59 CKD cases) have direct cost of illness less than a thousand rupees expenditure per month & also same results found i.e. 39% (23 out of 59 pts) have expenditure between a thousand rupees to two thousand rupees. It might be possible that these patients are basically from below poverty line (BPL) that's why they are allowed to admit in Govt. hospital & their expenditure is less as compared to other patients. 12% (7 out of 59 pts) patients have expenditure above rupees four thousand per month.

Non-dialysis CKD patients have low direct cost of illness as compared to Dialysis patients. 62.5% Non-dialysis patients & 9.37% Dialysis patients have below a thousand rupees direct cost of illness. 53.12% of Dialysis patients have direct cost of illness between Rs.1001-2000. While 18.75% of Dialysis patients have direct cost greater than Rs.4000. This indicates that dialysis may increase the cost of illness.

Indirect cost of illness of CKD patients which consists of transportation cost of both the patient & the companion & also loss of earnings of both the patient & companion. It is found that 27.11% (16) of the CKD patients have indirect cost of illness below Rs.700 per month while 33.89% (20) of the CKD patients have that between Rs.701-1400. This may indicate that majority of the CKD patients attending the Sandarbha-Seva Rugnalaya, Nasik are from nearby area. While 15.25% (9) of the CKD patients have to come by paying greater than Rs. 2800 per month.

Also, it is found that there is huge difference of indirect cost of illness between the Dialysis patients & Non-dialysis patients. 59.25% (16) of Non-dialysis patients & 0% (0) of Dialysis patients have indirect cost of illness below Rs. 700 per month. While 40.62% (13) of Dialysis patients have Rs.701-1400 & 25% (8) of Dialysis patients have more than Rs. 2800, indirect cost of illness per month. This indicates that Dialysis increases indirect as well as direct cost of illness.

DISCUSSION

On studying the results obtained from above data, it is found that for direct cost of illness, 96.29% of the Non-dialysis CKD patients have Rs. 0-2000 per month expenditure, while only 62.50% of the CKD patients which are on Dialysis come under this expenditure category.

As far as concerned with indirect cost of illness 85.18% of the Non-dialysis CKD patients have Rs.0-1400 per month expense while only 40.62% of the on Dialysis CKD patients have that per month.

The Pharmacoeconomics of this observational study indicates that 63% of the CKD patients have more cost of illness (both direct & indirect) per month than their monthly family income. Only

30% of the CKD patients have less cost of illness (both direct & indirect) per month than family income.

LIMITATION OF THE STUDY

This study is having less duration, simultaneous study should be done with larger sample-size & at multivariate sites.

RECOMMENDATIONS

Nowadays, the prevalence of CKD patients is increased & for on Dialysis patients, it is a herculean task to reach to the hospital twice a week. So, Government should pay attention to the transportation cost as like medication costs of these patients. Or Government should make the policy of concession in the transportation costs as like Cancer patients.

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TABLES & FIGURES

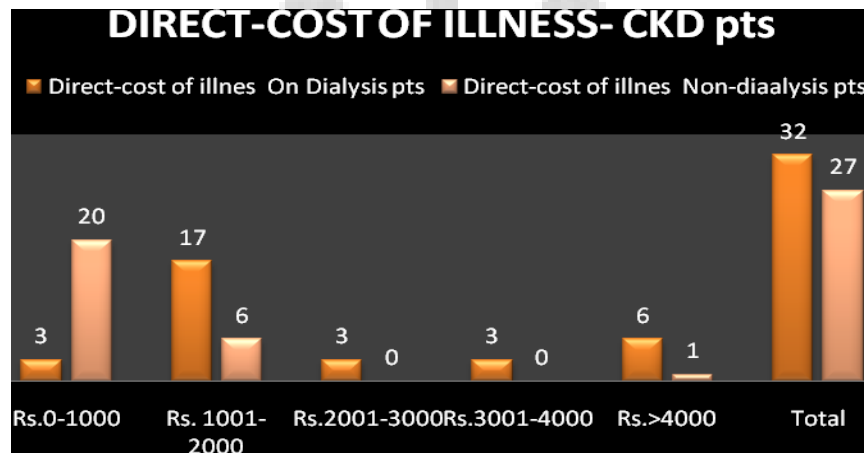


Fig. No. 1 Direct cost of illness in CKD patients which are on Dialysis & without Dialysis

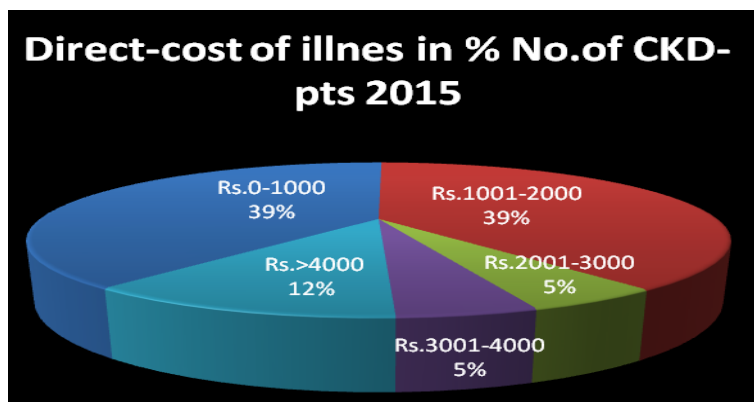


Fig. No. 2. Direct cost of illness in Number of CKD-patients (Percentage)

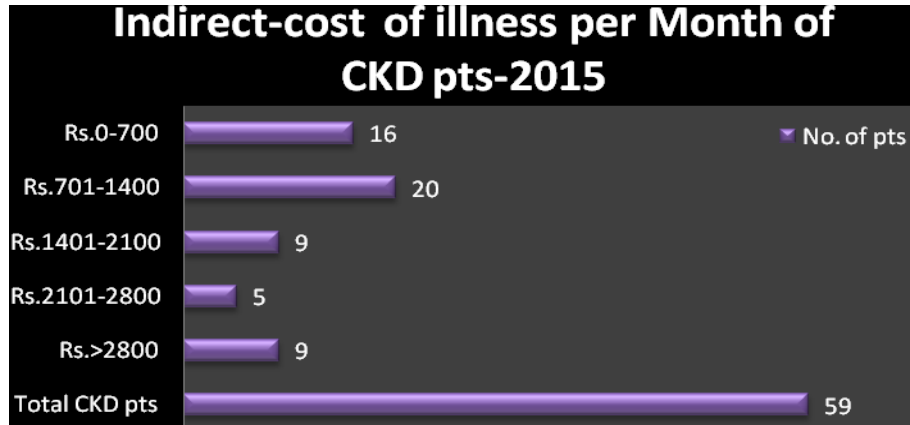


Fig. No. 3: Indirect Cost of CKD patients- 2015

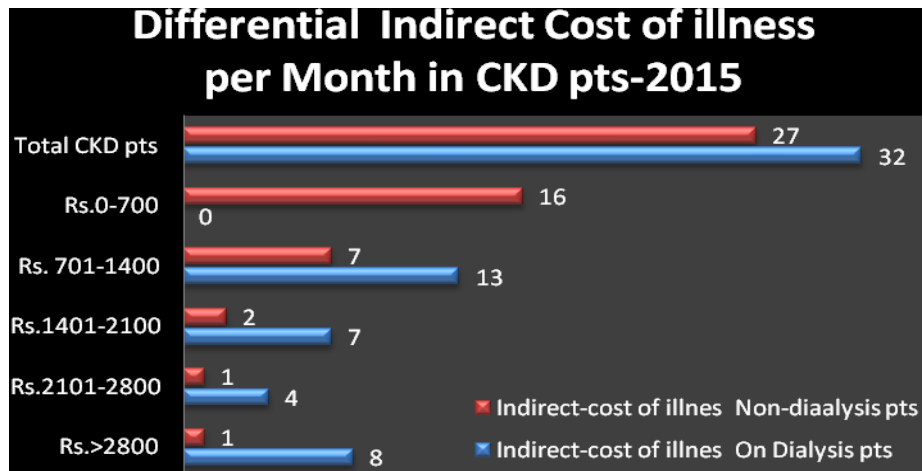


Fig. No. 4. Differential Indirect cost of illness per month in CKD patients, 2015

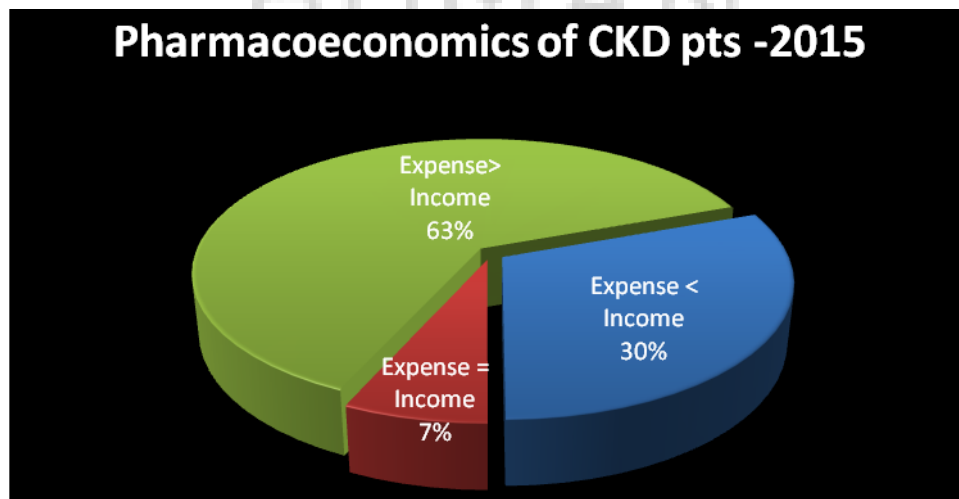


Fig. No. 5. Pharmacoeconomics of CKD patients-2015