

CLINICAL PHARMACY ACTIVITIES IN END STAGE RENAL DISEASE AND OUT PATIENT DIALYSIS IN A TERTIARY CARE HOSPITAL

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Abstract

Dialysis is a treatment that filters and purifies the blood using a machine. This helps keep your fluids and electrolytes in balance when the kidneys can't do their job. The clinical pharmacy activities in End Stage Renal Disease and Out Patient Dialysis in Jayabharath hospital Nellore. To evaluate the clinical pharmacy activities in end stage renal disease and outpatient dialysis in a tertiary care hospital. Totally 70-100 patients with ESRD and dialysis in the age group of 30 to 60 enrolled in the study and 70 patients with ESRD were included in the study. Evaluation included the collection of laboratory data, efficacy assessment of decrease in GFR, persistent proteinuria and kidney failure in ESRD and dialysis and due to clinical pharmacy activities increase life span of patients. Totally 30 subjects had low GFR and 28 subjects had proteinuria. Clinical pharmacy activities significantly reduced the incidence low GFR and Proteinuria to 5 and 7 respectively. Clinical pharmacy play a significant role in relieving the symptoms of End Stage Renal Disease (ESRD) and Dialysis. Recent researches and the outcomes of this study have suggested that a more comprehensive investigation must be performed to determine the role of clinical pharmacy activities in ESRD and Dialysis. Clinical pharmacy significantly reduced symptoms of ESRD and Dialysis. Clinical pharmacy significantly reduced symptoms of ESRD and Dialysis. And also, it will be helpful to patient regarding disease and treatment. It also significantly increased the livebirth rates.

Key words: ESRD, Dialysis, GFR, Proteinuria, Kidney failure.

Introduction

Chronic kidney disease (CKD) represents a major public health problem in developed and developing countries. It is estimated that approximately 5% of the adult U.S. population is affected by CKD, which is defined as serum creatinine concentrations greater than 1.2 to 1.5mg/dl. ^[1]The European Kidney Health Alliance(EKHA) reports that approximately 10% of European citizens are affected by some degree of CKD .CKD and end-stage renal disease (ESRD) are associated with an increased risk of mortality, increased rate of hospitalisation, and decreased life expectancy. Progression from early to late stages of CKD generally results in the onset of new symptoms and concomitant complications. Frequent complications and comorbidities of CKD include fluid and electrolyte abnormalities, professionals, addressing multiple, often unmet needs for pharmacotherapy optimization. Ideally, this happens through a preventive, rather than are active, approach. Evidence from the literature supports the involvement of clinical pharmacists in several disease areas and underlines the positive patient outcomes and improvement of care that result. ^[2]The medical management of pre dialysis and dialysis patients involves complex and highly variable pharmacotherapy, including frequent monitoring and evaluation to ensure optimal pharmacotherapy, adherence to medication, and control of comorbidities and other risk factors. A high number of prescribed medications, poor medication adherence, and frequent dosage changes may contribute to drug-related morbidity and related problems. ^[3,4] Several studies report poor quality and gaps in the care of CKD patients with respect to the treatment of comorbidities, referrals to specialists, and the preparation for RRTs. Clinical pharmacists are directly engaged in the care of CKD and ESRD patients in different settings. Various possibilities and opportunities for clinical pharmacists to contribute to this field are described and exemplarily supported by evidence in an American College of Clinical Pharmacy (ACCP) opinion paper. ^[5,6]

This literature review aims to systematically summarise the published evidence on the role of clinical pharmacists in the care of CKD and ESRD patients across different settings, to synthesise and highlight findings on the impact of clinical pharmacists, their various key activities, and their main areas of involvement, and to describe the different characteristics of clinical pharmacy services for the CKD and ESRD patient population. Collaboration between physicians and pharmacists has been advocated to improve health care and it has contributed to better patient outcomes . Physicians' opinions and expectations of pharmacists have been assessed as a way of improving or adjusting future pharmacist interventions. Physicians appear to be less supportive, however, when considering pharmacists screening for chronic conditions, selecting medicines or dosages according to agreed protocols after a general practitioner diagnosis or running anticoagulant or lithium clinics. ^[7,8] At the hospital level, more integration of pharmacists was noted with physicians considering pharmacists an integral part of the team . Physicians expect pharmacist advice regarding medication appropriateness, information about medication interactions, toxicology and use in pregnancy and help in the decision-making process based on medication efficacy and pricing . Clinical pharmacist interventions raise physician awareness to medication costs and medication quality and influence their prescribing habits . Two recent systematic reviews showed that pharmacists have contributed to the detection medication-related problems, to improve patient outcomes and to reduce costs

associated with medications in patients with chronic kidney disease. ^[9,10] Previous research revealed that renal-specialized hospital pharmacists perceived an expanded role in this area and expected physician acceptance. Gaining insight into physician perceptions and willingness toward working with pharmacists in outpatient dialysis centers may be considered necessary to implement clinical pharmacy services successfully. The study mainly determine the good clinical pharmacy activities in end stage renal disease and outpatient dialysis to get better and safety clinical outcomes involving the clinical pharmacy services and also to reduce risk factors and clinical symptoms with proper usage of medications with proper clinical pharmacist. ^[11,12]

Methodology

Study design: A Randomized, descriptive and Before – after study design.

Study site: Our study conducted on Jaya Bharath Hospital, Nellore.

Study period: December 2020 to May 2021 (6 month).

Study subjects: Subjects either with decreased GFR, Proteinuria, urine albumin, and creatinine.

Inclusion Criteria:

- Patients with age group of 30-60 yrs.
- Evaluation include subject with persistent proteinuria, very low glomerular filtration rate, anemia are included in study.

Exclusion Criteria:

- Less than 25 yrs of age are excluded.
- Patients undergoing acute renal failure, polycystic kidney disease, multiplemyeloma, hereditary nephritis are excluded.
- Exclude the subjects consuming glimipiride, metformin and spiranolactone.

Sample size: Enrolled 100 Patients during these studies of which 70 are included with ESRD and Dialysis.

Study material:

- Individual Patient data collection proforma
- Patient informed consent form
- Patient counselling forms
- ESRD and DIALYSIS Awareness questionnaire forms
- ESRD and DIALYSIS information leaflet forms

Ethical approval: Ethical committee clearance was obtained from institutional ethics committee permitted to perform the research and they permitted to continue the study.

Patient enrolment: Patients are included in the study by taking prior permission from the patient by using patient informed consent form.

Study procedure:

A prospective, cross-sectional observational and back to back studies was conducted on December 2020 and May 2021 in the department of Nephrology and Dialysis in JAYABHARAT Hospital, Nellore, India. This study was approved by Institution Review Boards of JAYABHARAT Hospital, Nellore, India. All the subject's data obtained from medical record department of JAYABHARAT Hospital, Nellore. Subjects either with

decreased GFR, Proteinuria, urine albumin, and creatinine. Based on their lab reports where included in the study. Patients under 10-25 years were excluded from the study because they are less prone to kidney diseases. Totally 70-100 patients with Kidney disease in the age group of 30 to 60 years were enrolled in the study and 70 patients with ESRD were included in the studies and remaining was excluded from the study. Based on their lab reports where included in the study. Patients under 10-25 years were excluded from the study because they are less prone to kidney diseases. Totally 70-100 patients with Kidney disease in the age group of 30 to 60 years were enrolled in the study and 70 patients with ESRD were included in the studies. And remaining was excluded from the study. Patient data includes demographics details, family history, past medical history, laboratory investigations and current diagnosis were extracted from the medical record. Apart from that, clinical pharmacist activities has shown positive impact in patients. The parameters to diagnose ESRD are decreased GFR, decreased erythropoietin, true iron deficiency, ESRD Analyzed.

Statistical analysis:

Descriptive statistics were used to summarize the baseline characteristics. The subjects were based on end stage renal disease and dialysis and so Kruskal-Wallis test was used to determine the clinical pharmacist activities effects on ESRD patients and dialysis patients outcome for different period. The clinical profile outcome measures in a group were analysed using paired *t*-test. Effect of patient adherence to medication, dialysis is measured by Pearson correlation. A *P* value less than 0.05 were considered as significant.

Results and discussion

We screened 100 individuals for eligibility, of which 30 were excluded based upon our exclusion criteria. We have created awareness among 70 individuals about the End Stage Renal Disease and Dialysis who are eligible for our criteria. we categorized this study into clinical assessment and biochemical assessment and enrolled people based on this criterion. The mean age of study participants was 30.5±4.17 years. Totally 30 subjects had low GFR and 28 subjects had proteinuria. Clinical pharmacy activities significantly reduced the incidence. Totally 70-100 patients with Kidney disease in the age group of 30 to 60 years were enrolled in the study and 70 patients with ESRD were included in the study and remaining was excluded from the study. Patient data includes demographics details, family history, past medical history, laboratory investigations and current diagnosis were extracted from the medical record. Apart from that, clinical pharmacist activities has shown positive impact in patients. Before clinical pharmacy activities, 20 subjects out of total 70 subjects undergone severe CKD or death and 15 patients had dialysis, 5 subjects had normal live birth before clinical pharmacy involvement or activities and after significantly increased the conception rate, 30 subjects gave normal live birth of these ESRD subjects. Counseling of the patients played a major role that helped patients in lifestyle modifications that helped them in decreasing symptoms. In the clinical assessment we observed after clinical pharmacy activities the symptoms of the ESRD significantly reduced. When clinical pharmacy activities are involved, the Low GFR and Live birth are gradually increased. Patient data includes demographics details, family history, past medical history, laboratory investigations and current diagnosis were extracted from the

medical record. Apart from that, clinical pharmacist activities has shown positive impact in patients. The parameters to diagnose ESRD are decreased GFR, decreased erythropoietin, true iron deficiency, ESRD analyzed. Clinical pharmacy play a significant role in relieving the symptoms of End Stage Renal Disease (ESRD) and Dialysis. Recent researches and the outcomes of this study have suggested that a more comprehensive investigation must be performed to determine the role of clinical pharmacy activities in ESRD and Dialysis. ^[13-16]

Signs & symptoms	Treatment	No. of. subjects	Age groups			
			31-40	41-50	51-60	61-70
Low GFR	Before	30	12	4	9	5
	After		5	2	0	2
Proteinuria	Before	28	12	4	7	5
	After		7	4	0	2

Table-1: Summary of clinical pharmacy services in ESRD & Dialysis

Conclusion

Clinical pharmacy play a significant role in relieving the symptoms of End Stage Renal Disease (ESRD) and Dialysis. Recent researches and the outcomes of this study have suggested that a more comprehensive investigation must be performed to determine the role of clinical pharmacy activities in ESRD and Dialysis. Clinical pharmacy significantly reduced symptoms of ESRD and Dialysis. And also it will be helpful to patient regarding disease and treatment. It also significantly increased the live birth rates. We provide awareness program by leaflets and giving awareness in their lifestyle modifications to reduce complication through the patient counselling.

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