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A study of the adequacy of counselling regarding chronic kidney disease imparted to dialysis patients

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ABSTRACT

Background

Patients with ESRD undergo a complex treatment regimen including lifestyle modifications which affects the social and psychological functioning. Little is known about disease-specific knowledge of patients with CKD. This study used a questionnaire based study to characterise the patients' knowledge about kidney disease.

Methodology

A cross-sectional observational study was done on 100 ESRD patients attending Saveetha Medical College and Hospital during the period January-March 2019, undergoing hemodialysis treatment, using a structured kidney disease questionnaire: A test for measuring patient knowledge about ESRD.

Results

This study shows that only 3% of the patients were adequately counselled and there is significant association between age and level of knowledge among the patients (p value-0.000). It was also shown that the patient had better knowledge regarding general CKD followed by hemodialysis and least knowledge regarding peritoneal dialysis and transplantation.

Conclusion

The study showed that patients in our unit were not adequately counselled regarding the disease condition, progress and management. Various studies have shown that patients with CKD must have knowledge about their condition and the various treatment options available, before initiation of the treatment.

INTRODUCTION

A large number of people in India (nearly 90,000) develop End-Stage Renal Disease (ESRD) each year – chronic glomerulonephritis (3.7%) diabetic nephropathy (24%), chronic tubulo-interstitial disease (37%) and nephro-sclerosis (13%) constitute the most frequently underlying diseases. Along with dialysis, these patients with

ESRD undergo a complex treatment regimen and certain lifestyle modifications such as dietary changes which affects the social and psychological functioning. [1]

Patients with chronic kidney disease(CKD) have very little disease-specific knowledge [2].Health education is particularly more important in end stage renal disease/chronic kidney disease patients due to chronicity of the disease, frequent

contact with healthcare professionals, a large amount of medical information that can be imparted to the patients which helps in self care management and hence better treatment outcomes. Here, We adapted a questionnaire based study and examined the results of the study to characterise the patients' knowledge about kidney disease.

METHODOLOGY

A cross-sectional observational study was done on 100 End stage renal disease patients attending Saveetha Medical College and Hospital during the period January-March 2019, undergoing hemodialysis treatment, using a structured kidney disease questionnaire: A test for measuring Patient knowledge about ESRD[4].All these patients were counselled regarding their disease, prognosis and management options before initiation on

hemodialysis by the respective consulting nephrologist in a busy out-patient department that caters to approximately 400 out-patients per week. The questionnaire was translated in Tamil to make it easier for the local people to understand it better [Appendix 1]. The questionnaire contained a total of 26 multiple choice questions in which the patients were tested on the following areas: Normal kidney function, kidney diseases, current treatment options, maintenance hemodialysis, peritoneal dialysis, Renal transplantation. Each patient took about 20-30 minutes for answering the questions. Ethical clearance was obtained from the Institutional Ethics Committee of the College before initiation of the study. The answers of each patient for each question were recorded and analysed using SPSS software version 19. We divided the questions into 4 categories based on their area of testing:

AREA	QUESTION NUMBERS
GENERAL CHRONIC KIDNEY DISEASE	1,2,3,6,7,12,13,14,16,18,21,22,24
HEMODIALYSIS	5,9,19,26
PERITONEAL DIALYSIS	4,11,20,23,25
TRANSPLANTATION	8,10,15,17

OUTCOMES AND MEASUREMENT

Patient's sociodemographic characteristics (n-100)

CHARACTERISTICS		(%)
AGE(yrs)	<40	12.0
	40-60	72.0
	>60	16.0
	TOTAL	100.0
GENDER	MALE	75.0
	FEMALE	25.0
	TOTAL	100.0
DIALYSIS VINTAGE(months)	<12	7.0
	12-24	14.0
	>24	19.0
	TOTAL	100.0
EDUCATIONAL STATUS	PRIMARY	39.0
	SECONDARY	36.0
	GRADUATE	25.0
	TOTAL	100.0

Patients' sociodemographic characteristics (n-100)

Patients were awarded 1 point for each correct answer for a total of 26 questions. The number of

correct answers were considered a surrogate for the level of counselling the patients received at

initiation of dialysis regarding their disease and management. Based on the number of correct

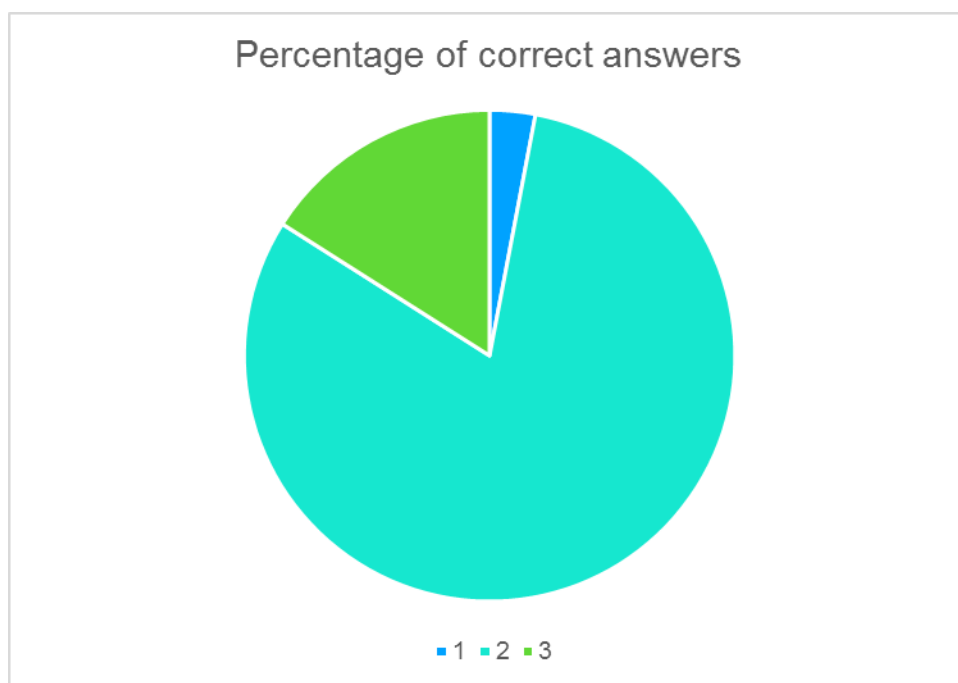
answers, the patients were divided into 3 categories.

NUMBER OF CORRECT ANSWERS	CATEGORY	INFERENCE
>16	1	ADEQUATE
10-16	2	MODERATE
<10	3	INADEQUATE

The patients in category 1 who gave more than 16 correct answers were considered as adequately counselled. Patients in category 2, who gave 10-16 correct answers were considered as moderately counselled and patients in category 3, who gave

less than 10 correct answers were considered as inadequately counselled.

Number of correct answers for individual questions by all the patients were also analysed to find out the specific areas of lack of knowledge regarding CKD.



Category 1-3%
 Category 2-81%
 Category 3-16%

RESULTS

The study was conducted on a total of hundred dialysis patients of which 75 were males and 25 were females of mean age 52.51 with a standard deviation of 10.546.

100% of the patients gave correct answers for the questions pertaining to (question 1-number of kidneys in the body, question 2-requirements for dialysis, question 9-number of dialysis sessions per week, question 14-duration of the kidney disease, question 19-dialyser) and none of the patients could

answer correctly the questions pertaining to (question 5-ultra filtration, question 21-detailed anatomy of the kidney, question 22-uremia, question 24-drugs for hyperkalemia, 26-AV fistula).For the other questions pertaining to electrolytes, peritoneal dialysis and Renal transplantation, the response varied with each patient. The p value showed significant association between age and level of knowledge among the patients (p value-0.000).There was no significant association between gender(p value-0.296),educational status (0.137), dialysis

vintage(0.599) and the level of knowledge among the patients.

The mean of the correct answers for each category of questions was compared to check the

level of knowledge in specific areas of CKD among the patients.

	N	MINIMUM	MAXIMUM	MEAN	STANDARD DEVIATION
GENERAL CKD	100	4	10	6.75	1.351
HEMODIALYSIS	100	2	2	2.00	0.000
PERITONEAL DIALYSIS	100	0	5	1.76	1.173
TRANSPLANTATION	100	0	4	1.48	0.990
OVERALL KNOWLEDGE	100	7	21	11.99	2.281

It is observed that the patients had better knowledge in general CKD followed by hemodialysis. It was also found that the patient had least knowledge regarding peritoneal dialysis and transplantation.

DISCUSSION

From the above observations, it was found that only 3% of the patients were adequately counselled before undergoing hemodialysis treatment. 81% of the patients were moderately counselled and 16% of the patients were inadequately counselled. This maybe attributed to the fact that counselling about CKD was only provided to these patients at the out-patient clinic by a busy nephrologist pressed for time. This possibility was considered and lead to a department audit to change the way these patients are counselled at the point of initiation of dialysis. The study also showed that patients were not being adequately counselled regarding peritoneal dialysis and transplantation. This has also lead to another departmental review of approach to these patients.

This study shows that there is significant association between the age of the patient and their level of knowledge. Patients who were younger (<40 yrs) had more knowledge than the older patients. This may be due to cognitive impairment of elderly patients undergoing hemodialysis treatment. A study by Murray et al in July 2006, showed a strikingly high prevalence of cognitive impairment in hemodialysis patients [8]. Another research by Majula kurella et al, showed that, In the elderly CKD is associated with the increased risk for cognitive impairment which cannot be fully explained by other well established risk factors[9]. Unfortunately, there are very few researches quoting the association between age and cognitive impairment.

Statistically, there was no significant association between dialysis vintage, educational status and the level of knowledge. This may be due to less sample size which is one of the limitations of this study. The other limitation of this study is that there was no intervention done to check if adequate knowledge had any impact on the patients' health as such, but the study was helpful in finding out if the patients had enough knowledge (adequately counselled) about CKD before initiation of treatment and hence helping to create awareness among the patients regarding the various components of the disease for better outcomes from the treatment.

A study done by Rincy T. Issac et al, stated that the information booklet on haemodialysis has helped the patients on haemodialysis in attaining more information which was evident in post-test knowledge score. The information booklet was well appreciated and accepted by the patients on haemodialysis as a means to improve their knowledge on haemodialysis [1]. Another research by Dixon Thomas et al, stated that the impact of patient counselling for six months was remarkable. On comparing the slightly declining or constant Quality of life in control group, patients under counselling group (test group) have shown a trend of improving quality of life. The study shows that patient counselling improves the health related Quality of life by creating awareness about the disease processes and helps in removing the misconceptions and better management of the condition. Data from the study shows the impact of patient counselling as promising in improving health related Quality Of Life in ESRD. Awareness of patients on diet and medication through patient counselling was found to be very effective in improving Quality Of life in hemodialysis patients. So it is evident that, if the patients are counselled

adequately before the initiation of dialysis treatment, it can have a great impact on the patient's health[7].

Patient Education is supported by various international organizations and guidelines and it seems to have better treatment outcomes, but a range of barriers prevent widespread implementation of comprehensive education for people with progressive kidney disease. Education efficiency can be increased by focusing on patients with progressive chronic diseases, establishing interdisciplinary care management, providing education in group settings. New educational approaches are being developed through research, but challenges to evaluating the public awareness and the outcomes inhibit the identification and broader implementation of successful strategies.

APPENDIX 1

A study of the adequacy of counselling regarding chronic kidney disease imparted to dialysis patients

The kidney disease questionnaire: a test for measuring patient knowledge about chronic kidney disease

1. People normally have two kidneys in the body.
 - A. True
 - B. False
 - C. Don't know
2. When a person has kidney disease, his kidneys must be removed from his body before he can get treatment with a dialysis machine.
 - A. True
 - B. False
 - C. Don't know
3. Kidneys do many important things in the body, but they function only at night while the person is sleeping.
 - A. True
 - B. False
 - C. Don't know
4. What is the term used to describe the vibration or buzzing sensation that can be felt over the vein of a shunt or fistula?
 - A. Hypoplasia
 - B. Lobulation
 - C. Enervation
 - D. Thrill or bruit
 - E. Don't know
5. In CAPD, waste substances pass from the blood, across the peritoneal membrane and into the dialysate fluid by a process called:
 - A. Diffusion
 - B. Transport
 - C. Excretion
 - D. Chemical breakdown
 - E. Don't know
6. In addition to removing wastes from the blood, the artificial kidney also functions to remove excess water from the blood. This water-removal process is called:
 - A. Ultra filtration
 - B. Ultra refraction
 - C. Osmosis
 - D. Catharsis
 - E. Don't know
7. A patient with kidney disease can experience high blood pressure, swelling and rapid weight gain when his body becomes overloaded with:
 - A. Protein
 - B. Urea
 - C. Water
 - D. Don't know
8. Which one of these foods has a lot of potassium?
 - A. Rice
 - B. Ice cream
 - C. Bananas
 - D. Don't know
9. Approximately how many times a week do hemodialysis patients usually have their sessions on the kidney dialysis machine?
 - A. 1
 - B. 3
 - C. 6
 - D. Don't know
10. A patient with chronic kidney diseases may have a living relative who wants to donate a kidney to the patient for transplantation. Which one of the following items about the donor is FALSE?
 - A. The donor will have to undergo a series of medical tests before the transplant operation.

- B. The donor runs very little risk to his own health when he donates one kidney.
- C. The donor will need to take immunosuppressive drugs for life.
- D. After the transplant operation the donor's remaining kidney will enlarge in size.
- E. Don't know
11. Which one of the following items about kidney transplantation is FALSE?
- A. Sometimes a transplanted kidney will begin to function as soon as the blood vessels are connected on the operating table.
- B. Kidney transplants are placed in the patient's pelvis rather than in the usual kidney location.
- C. A person who has recovered from transplant surgery and has a new well-functioning kidney will no longer need dialysis treatment.
- D. A patient can receive a kidney from a living relative but the donor's kidney must be removed one week before the transplant for close observation.
- E. Don't know
12. CAPD is a form of dialysis treatment which is used as an alternative to hemodialysis. One advantage of CAPD is that:
- A. It allows the patient to walk freely during the course of treatment.
- B. It only needs to be performed once a week.
- C. It does not involve any preparatory surgical procedure.
- D. It makes it easier for the patient to bathe and swim.
- E. Don't know
13. Patients with chronic kidney disease are advised to eat limited quantities of potassium-rich foods. Elevated potassium levels in the blood is dangerous because:
- A. It can cause fluid overload.
- B. It can raise the patient's hematocrit.
- C. It can decrease the production of white blood cells.
- D. It can cause the heart to beat irregularly and even stop.
- E. Don't know
14. Kidney disease is a problem that comes with old age-young people do not get this disease.
- A. True
- B. False
- C. Don't know
15. Most types of kidney disease last about 5 years. After this the kidneys start to work normally again.
- A. True
- B. False
- C. Don't know
16. Peritonitis, an infection of the abdominal cavity is one of the major problems for patients on CAPD.
- A. True
- B. False
- C. Don't know
17. 17)Kidney transplantation is the best form of treatment for patients with kidney disease because after the transplant the patients are less likely to get infections from bacteria or virus.
- A. True
- B. False
- C. Don't know
18. There are about one million tiny filters in the human kidney. They are called:
- A. Ribosomes
- B. Ureters
- C. Glomeruli
- D. Organelles
- E. Don't know
19. In kidney failure, waste products in the blood build up to abnormal levels and this causes a condition called:
- A. Absorption
- B. Uremia
- C. Libido
- D. Adaptation
- E. Don't know
20. The artificial kidney is also called :
- A. Henle's loop
- B. Transferrin
- C. Bun
- D. dialyzer
- E. Don't know

21. A new type of dialysis for treating kidney disease is called CAPD. Which part of the body makes this type of dialysis possible?
- Peritoneum
 - Bladder
 - Renal pelvis
 - Don't know
22. Patients with kidney disease are told not to eat salty foods because salt has a lot of:
- Potassium
 - Sodium
 - Calcium
 - Don't know
23. Immunosuppressive drugs are given to transplant patients in order to:
- Prevent and treat rejection of the kidney graft.
 - Treat blood clotting in the new kidney.
 - Prevent infection of the kidney by virus or bacteria.
 - Raise the patient's hematocrit.
 - Don't know
24. Bone disease is a medical problem that could result from chronic kidney disease. It can occur because:
- The diseased kidney can no longer rid the body of excess water in a normal fashion.
 - The diseased kidney loses its ability to keep calcium and phosphate levels in the proper range in the body.
 - The diseased kidney loses its ability to excrete excess potassium from the bloodstream.
 - The body is no longer able to use protein foods.
 - Don't know
25. Which medication is sometimes prescribed to control the level of potassium in the patient's body?
- Riopan
 - Kayexalate
 - Amphojel
 - Aldomet
 - Don't know
26. In the regular procedure for CAPD, dialysate fluid is introduced into the patient's abdominal cavity through an implanted tube just below the navel. The dialysate fluid is then:
- Left inside the abdominal cavity for several hours and then drained out.
 - Left inside the abdominal cavity until it is completely absorbed into the body.
 - Transferred into an artificial kidney through another tube.
 - Transferred into an artificial kidney through the same tube.
 - Don't know

CONCLUSION

Based on this study, it is evident that the patients did not have adequate knowledge regarding CKD/ESRD before initiation of treatment. Through patient education, patients can have their questions, concerns, and their needs regarding the disease addressed and it also ensures them to engage in self management of their CKD risks which can have a great impact on their treatment outcomes. To deal with such complex treatment regimens, including monitoring BP and blood glucose, dietary and lifestyle modifications, patients with CKD should have knowledge about their condition and the various treatment options available, before initiation of the treatment.

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