

Current status of haemodialysis in a tertiary care government hospital

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Abstract

Background: An effort is made to get demographic picture of patients undergoing haemodialysis in a tertiary care hospital. Even though, there are various studies on haemodialysis in western countries less is documented in India.

Objective: So we carried out a study in our set up to know the indications, incidences and types of dialysis catheters used in dialysis units of our district government hospital setup.

Methods: This prospective study was conducted in dialysis units of a government district hospital from October 2014 to September 2015. 110 patients were selected by convenient random sampling. Patient age, sex, history, type of kidney disease and associated conditions were also noted according to the proforma. Datas were collected and tabulated. Percentage distribution was calculated.

Result: Male patients (68.5%) were more than female patients. Majority of patents were in the age group of 66-75 group. Maximum number of patients were diabetic (39.6%) followed by hypertension and various infectious diseases like Leptospirosis, gastroenteritis etc. Patients for haemodialysis were more in chronic kidney diseases than acute kidney diseases. In chronic kidney diseases internal jugular vein catheter was more commonly used whereas in acute cases femoral catheter was more common.

Conclusion: It is found out that increased incidence of haemodialysis in older age group is due to increased incidence of diabetes and hypertension in old ages.

Keywords: Haemodialysis, Intravenous Catheter, Chronic Kidney Disease, Acute Kidney Disease.

Introduction

Hemodialysis is a process of purifying the blood of a person whose kidneys are not functioning properly. It is indicated whenever, there is any imbalance in body fluids and chemicals in our body. An effort is made to get demographic picture of patients undergoing this procedure in a tertiary care hospital. It can be achieved by temporary venous access or a permanent AV fistula. Haemodialysis access of less than 3 weeks duration should be obtained using a non-cuffed or a cuffed double-lumen percutaneously inserted catheter.⁽¹⁾

Venous catheters are commonly used for acute angioaccess during maintenance haemodialysis in acute renal failure and end- stage renal failure patients. Temporary access is established by the percutaneous insertion of a catheter into a large vein.⁽²⁾ Internal jugular, femoral or less desirable, subclavian⁽³⁾ are the most commonly selected ones. Even though, there are various studies on central venous catheters used in haemodialysis in western countries less is documented in India. So we carried out a study in our set up to know the indications, incidences and types of dialysis catheters in dialysis units of our district government hospital setup.

Materials and Methods

This prospective study was conducted in dialysis units of our government district hospital from October 2014 to September 2015. 110 patients were selected by convenient random sampling.

Study subjects: Inclusion criteria: Patients who required haemodialysis through venous catheters irrespective of cause for renal failure were included.

Exclusion criteria: Patients who had central venous catheter not for dialysis also were excluded from our study.

Informed consent from patient or bystanders was obtained and then catheter was inserted after taking all sterile precautions. Patient age, sex, history, type of kidney disease and associated conditions were also noted according to the proforma. Datas were collected and tabulated. Percentage distribution was calculated.

Result

Table 1: Sex Distribution of patients on haemodialysis

Sex	Frequency(n)	Percentage (%)
Female	35	31.5
Male	76	68.5
Total	111	100.0

Table 2: Age group distribution of patients on haemodialysis

Age groups	Frequency(n)	Percentage (%)
18-25 yrs	11	9.9
26-35 yrs	12	10.8
36-45 yrs	21	18.9
46-55 yrs	5	4.5
56-65 yrs	28	25.2
66-75 yrs	34	30.6
Total	111	100

Table 3: Percentage distribution of haemodialysis patients depending upon the type of kidney diseases

Diagnosis	Frequency(n)	Percentage (%)
Acute renal failure	48	43.2
Chronic kidney diseases	63	56.8
Total	111	100

Table 4: Patient distribution depending on causes for haemodialysis

Cause for renal failure	No. of cases	Percentage distribution of cases
Diabetes	44	39.6
Hypertension	22	19.8
Leptospirosis	14	11.7
Poisoning	9	6.3
Sepsis	9	6.3
Acute gastroenteritis	6	4.5
Renal diseases	7	4.8

Table 5: Types of catheter used in different types of kidney diseases

Diagnosis	Types of catheters			Total
	Internal jugular	Femoral	Sub clavian	
Acute renal failure	6	41	1	48
	15%	82.0%	4.8%	43.2%
Chronic renal failure	34	9	20	63
	85.0%	18%	95.2%	56.8%
Total	40	50	21	111

As shown in Table 1, male patients (68.5%) were more than female patients (31.5%). Majority of patients studied were in 46-55 age group (30.6%), followed by 56-65 age group (25.2%) and 36- Maximum number of patients were diabetic (39.6%) followed by hypertension and various infectious diseases like Leptospirosis, gastroenteritis etc. as shown in Table 4. 45 age group (25.2%) as shown in Table 2. Patients for haemodialysis were more in chronic kidney diseases than acute kidney diseases. In chronic kidney diseases internal jugular vein catheter was more commonly used whereas in acute cases femoral catheter was more common as shown in Table 5.

Discussion

Hemodialysis is a form of renal replacement therapy and is most commonly used in India. In our study, a maximum number of patients on haemodialysis were type 2 diabetics followed by hypertensives. Male patients were more than female patients on haemodialysis. Majority of patients studied were in elderly age group. Similar to our study, a few studies found out that higher prevalence of haemodialysis was seen in among male elderly patients than younger age patients.^(4,5) It is found out that increased incidence of hemodialysis in older age group is due to increased incidence diabetes and hypertension in old ages.

In our study, diabetes is the leading cause for renal failure. Similar to this was seen in different studies carried out at Haemodialysis center where an increased incidence of haemodialysis was seen in diabetic patients and the leading cause of end stage renal disease was

diabetes.^(6,7) But a study carried out by Gan et al found out that from 2010 onwards, the leading cause for incidence of end stage renal diseases has changed from chronic glomerulonephritis to diabetes mellitus.⁽⁸⁾ In spite of this, they stated that still the chronic glomerulonephritis is the leading cause of end stage renal disease in prevalent maintenance haemodialysis patients.⁽⁸⁾ Patients for haemodialysis were more in chronic kidney diseases than acute kidney diseases. In chronic kidney diseases internal jugular vein catheter was more commonly used whereas in acute cases femoral catheter was more common in our study. A study carried out in haemodialysis centre showed that due to various reasons an increasing number of patients are becoming dependent on cuffed haemodialysis catheters for chronic haemodialysis access.⁽⁹⁾ More than 65% of patients of chronic kidney disease (CKD) present as end-stage renal disease (ESRD) to a nephrologist in India, thus making it difficult for any systematic planning for ESRD care in stage IV of CKD.⁽¹⁰⁾

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