

Original research article

An Observational Study of Epidemiological Factors Among Acute and Chronic Renal Failure Patients in Gujarat.

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Abstract

Introduction: Renal failure is a complex disorder that occurs in a variety of settings with clinical manifestations ranging from a minimal elevation in serum creatinine to anuric renal failure. Recent epidemiological studies demonstrate the wide variation in etiologies and risk factors for acute renal disease, describe the increased mortality associated with this disease (particularly when dialysis is required), and suggest a relationship to the subsequent development of chronic kidney disease (CKD) and progression to dialysis dependency **Aim:** to find out the epidemiological parameters responsible for acute and chronic renal failure in a Government Hospital of Gujarat. **Methodology:** This was a cross sectional study done in the department of Pathology, M. P. Shah Medical College, Jamnagar. These patients were above the age of 18 years. Verbal consent was taken from all patients. 50 patients with acute renal injury were included along with 100 patients with chronic renal failure. **Results:** maximum incidence of acute renal failure was in the age group of 31-40years (24%) followed by the age group of 41-50 years(18%) . The maximum incidence of chronic renal failure was in the age group of 41-50years (26%) followed by the age group of 51-60 years(24%) followed by the age group of 31-40 years(20%).

Keywords: acute renal failure, chronic renal failure, CKD

Introduction

Renal failure (ARF) is a complex disorder that occurs in a variety of settings with clinical manifestations ranging from a minimal elevation in serum creatinine to anuric renal failure. It is often under-recognized and is associated with severe consequences [1-4]. Recent epidemiological studies demonstrate the wide variation in etiologies and risk factors [1,5-7] for acute renal disease, describe the increased mortality associated with this disease (particularly when dialysis is required) [1,4,6,8,9], and suggest a relationship to the subsequent development of chronic kidney disease (CKD) and progression to dialysis dependency [1,4,8,10-12]. Despite the significant progress made in understanding the biology and mechanism of acute and chronic RF in animal models, translation of this knowledge into improved management and outcomes for patients has been limited. During the last five years, several groups have recognized these limitations and have worked to identify the knowledge gaps and define the necessary steps to correct these deficiencies.¹⁻⁹ The aim of the current study is to find out the epidemiological parameters responsible for acute and chronic renal failure in a Government Hospital of Gujarat.

Methodology

This was a cross sectional study done in the department of Pathology, M. P. Shah Medical College, Jamnagar in collaboration with biochemistry department and dialysis unit of G.G. Hospital, Jamnagar, Gujarat to access the patients and record their data. The study was done to study the patients with kidney injury, and to access the changes in serum sodium and serum potassium level in pre and post renal dialysis patients. The present research paper is the part of the findings from this study. Here we have shared the epidemiological parameters associated with the patients suffering from acute and chronic kidney failure.

Subjects detailed identification data and medical history was taken with the help of a questionnaire. These patients were above the age of 18 years. Verbal consent was taken from all patients. 50 patients with acute renal injury were included along with 100 patients with chronic renal failure.

Results

Table 1:

Sex	Acute renal failure		Chronic renal failure	
	No of Cases	Percentage(%)	No of Cases	Percentage(%)
MALE	29	58	64	64
FEMALE	21	42	36	36
TOTAL	50	100	100	100

The 50 study patients with acute renal failure comprised 29 males and 21 female.

The above table shows male: female ratio among acute disease was 1.4:1. The 100 study patients with Chronic renal failure comprised 36 females and 64 males.

The results shows male: female ratio 1.8:1.

Table 2:

Age Group (In Years)	Acute kidney injury		Chronic kidney Failure	
	Total Numbers(N)	Percentage(%)	Total Numbers(N)	Percentage(%)
BELOW 20	05	10	06	6
21-30	08	16	12	12
31-40	12	24	20	20
41-50	09	18	26	26
51-60	08	16	24	24
61 ONWARDS	08	16	12	12
TOTAL	50	100	100	100

Above table shows that the maximum incidence of acute renal failure was in the age group of 31-40years (24%) followed by the age group of 41-50 years(18%) . The minimum incidence was below 20 years of age (10%).The incidence was similar in remaining age groups. The table also shows that the maximum incidence of chronic renal failure was in the age group of 41-50years (26%) followed by the age group of 51-60 years(24%) followed by the age group of 31-40 years(20%). The minimum incidence was below 20 years of age (6%).the incidence was more or less similar in remaining age groups. Mean age of 44.4±13.3 years (range from 19-74 years).

Discussion

Acute kidney failure

The male to female ratio of 1.4:1 among acute kidney failure patients in the present study is consistent with that of other studies like Helmut Schifel et al.(2002)¹⁰ 1.3:1, Dr. Qurban Ali Shaikh et al. (2008)¹¹ 1.6:1 Vipul Chimanlal Chitalia (2002)¹² 1.6:1. While this ratio is higher in other study like Polrat Wilairatona et al. (1999)¹³ 3.7:1, since this study was done exclusively in cases of malarial ARF and the incidence of malaria is higher in males.

Mean age of patients in the present study is 42.4 years, which is quite comparable with other studies like, Hayat A et al. (2007)¹⁴ 35.0 years, Vipul Chimanlal Chitalia (2002)¹² 34.5 years and Polrat Wilairatona et al.(1999)¹³ 30.4 years.

Chronic Kidney failure

In the present study total 150 cases were studied ,which comprises 100 cases of chronic renal failure(CRF) and 50 cases of acute renal failure(ARF). The results obtained were compared with other studies in which most of the parameters taken up were comparable with present study.

The male to female ratio of 1.8:1 in the present study is consistent with that of other studies like Scott T.W.Morris et al.(1993)¹⁵ 1.8:1, Mohd.Suliman S.et al.(1995)¹⁶ 1.8:1, Istavan Lorincz et al.(1999)¹⁷ 1.6:1. While this ratio is slightly lower in other studies like Tarif N,Yamani H et al.(2008)¹⁸ 1.2:1, Ahmad Z (2010)¹⁹ 1:1, A.Blumberg,H.W.Roser et al.(1997)²⁰ 1:1.Because they have studied small range of patients.

The major etiological factors in the present study is diabetes so the mean age of patients is 44.4 years, which is quite comparable with other studies like Malhis M et al.(2010)²¹ 44.7 years, A Krishnamurthy, K Arumugasmy et al(2010)²² 49.8 years, Nemati E,Taheri S.(2010)²³ 52.6 years, Agraharkar et al.(2003)²⁴ 53.9 years, Tarif N,Yamani H et al.(2008)¹⁸ 53.1 years and Ahmad Z(2010)¹⁹ 55.2 years.

Conclusion:

Acute renal failure and chronic renal failure is still the disease of middle aged males.

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