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Research Article

**ANALYSIS OF FREQUENCY OF FACTORS LEADING TO
REQUIRED ACUTE KIDNEY INJURY IN PATIENTS IN
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Abstract:

Introduction: The incidence of the acute kidney injury (AKI) has been continuously increased over the years. Acute kidney injury (AKI) is a common complication in hospitalized patients. This study was conducted to compare the epidemiological characteristics, clinical factors, and outcomes of HAAKI.

Objectives of the study: The main objective of the study is to determine the frequency and outcomes of factors leading to required Hospital acquired acute kidney injury in patients in Pakistan.

Study Design: This cross sectional study was conducted in Bahawalpur Victoria Hospital during January 2019 to June 2019. Medical charts were reviewed by the researcher himself to look for factors leading to hospital acquired acute renal failure. Presence of more of these Temperature more than or equal to 38°C, Heart rate more than 90 per minute, Respiratory rate more than 20 per minute, WBC count more than 12 thousand /mm³ were taken as sepsis. Patients were followed 7 days if alive were taken as survival.

Results: A total of one hundred & seventy three patients fulfilling the inclusion criteria were recruited in the study. The average mean age of the patient was 60.3±15.69 whereas minimum age was 17 years and maximum age was 90 years respectively. The analysis of factors like (TDDM2, Nephrotoxic Drugs, Sepsis, and Hypotension & Volume blood loss) showed an increase in mortality according to the proportion percentages (32.9%, 69.3%, 67.1%, 67.1%, and 29.5% respectively). Most of the patient's age was follow up <66 years of age i.e. 115(66%).

Conclusion: It is concluded that the analysis of factors like (TDDM2, Nephrotoxic Drugs, Sepsis, and Hypotension & Volume blood loss) showed an increase in mortality according to the proportion percentages (32.9%, 69.3%, 67.1%, 67.1%, and 29.5% respectively). Out of 173 total numbers of patients 105(61%) patients were survived.

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INTRODUCTION:

Acute kidney injury (AKI) is becoming increasingly common in elderly individuals. The presence of multiple comorbidities as well as age-related changes in the kidney, systemic vasculature and immunological system render older patients more prone to renal injury [1]. Hypovolemia, sepsis, and iatrogenic complications related to drug toxicity, contrast-induced nephropathy, and preoperative complications therefore often occur in older hospitalized patients [2]. Although AKI is treated in the same way in elderly individuals and younger patients, elderly individuals are more vulnerable to dialysis-related complications such as hemodynamic instability, bleeding, and mild disequilibrium syndrome [3]. Strategies for the prevention of AKI are particularly important in these fragile patients, but making an early diagnosis is especially challenging in this age group [4].

The term 'advanced age' has usually been used to describe a condition in which most physiological functions are shutting down and life expectancy is short. Specific age limits after which an individual is considered to be of advanced age have varied over time, and from one society to another [5]. The age of 65 years is most often used as a cut-off for a number of reasons, including the age of eligibility for social security benefits set by the German chancellor Otto von Bismarck in the 1880s, and the age set for the beginning of retirement in the Western world [6].

Objectives:

The basic objectives of the study are:
TO determine the frequency of factors leading to required Hospital acquired acute kidney injury in patients presenting in Pakistan

MATERIALS AND METHODS:

This cross sectional study was conducted in Bahawalpur Victoria Hospital during January 2019 to June 2019. There are 173 patients that were included in this study.

Medical charts will be reviewed by the researcher himself to look for factors leading to hospital acquired acute renal failure Use of nephrotoxic drugs like gentamycin for two or more days before to acute renal failure will be taken as factors causing hospital acquired AKI. Presence of more of these Temperature more than or equal to 38°C, Heart rate more than 90 per minute, Respiratory rate more than 20 per minute, WBC count more than 12 thousand /mm³ will be taken as sepsis. Blood pressure will be measure on line position two times four hours apart if SBP less than 80 millimeter mercury it will be taken as hypotension. Decrease in motivate of 5% or more from the base line after 48 hours of admission will be taken as volume loss. Patients will be followed 7 days if alive will be taken as survival. Information regarding factor, outcome and demographic like age, gender, morbid like diabetic mellitus will be collected and entered in to the preformed attached as annexure.

Data Analysis:

Data will be entered and analysis in to Spss version 21. Mean±SD will be calculated like age of the patients. Whereas Frequency & Percentages will also be calculated like gender distribution, co-morbid (T2DM), outcome of survival (Y/N) & factors like (Nephrotoxic Drugs, Sepsis, and Hypotension& Volume blood loss) as appropriate.

RESULTS:

A total of one hundred & seventy three cases after fulfilling the inclusion criteria were recruited in our study. Hundred & seventy two cases fulfilling inclusion criteria were registered through Emergency Department of Medicine Abbasi Shaheed Hospital, Karachi. Demographic history including age (in years) and sex (male or female) were taken. The average mean age of the patient was 60.3±15.69 whereas minimum age was 17 years and maximum age was 90 years respectively as shown on (Table 01).

Table 01: Descriptive statistics of age of the patients

Age of The Patients								95% C.I	
Age	N	Min	Max	Range	Mean	SD	Median	Upper	Lower
Years	173	17	90	73	60.30	15.69	66	57.94	62.66

The category of age distribution were followed 2(1.1%) between the age of <17 years, 9(5.2%) followed between 18-27 years & finally most of the patients were followed >58 years 116(67.1%) respectively as shown on (Table 02).

Table 02: Age distribution of the patients

Age Groups Distribution	Frequency(f)	Percentages (%)
<=17 Years	2	1.1%
18-27 Years	9	5.2%
28-37 Years	12	6.9%
38-47 Years	9	5.2%
48-57 Years	25	14.5%
>58 Years	116	67.1%
Total	173	100%

DISCUSSION:

The incidence of the acute kidney injury (AKI) has been continuously increased over the years. This is a difficult burden for the staff and cost of the intensive care units. In the previous year's epidemiological survey about the AKI was not carried out in Hungary [7]. We have no controlled data about the epidemiology of AKI in critically ill patients. We have no standardized protocol for the treatment of kidney injury. There are no consistent methods for acute renal replacement therapy in intensive care units [8]. There is not a specified and secured condition system for the management of acute kidney injury in Hungarian intensive care units. The lack of adequate financial refund for the renal replacement therapies is also a major problem.

There have been many studies of the epidemiology of acute renal failure. However, in most cases, the definition of acute renal failure rests on arbitrary biochemical cut-off points. These biochemical dividing lines vary from study to study making comparisons difficult. Biochemical subdivisions also have no clear association with outcome [9]. On the other hand, the need to start renal replacement therapy (severe ARF) defines as a quantum leap in illness severity, cost of care, and complexity of treatment, which has been demonstrated to be associated with a poor prognosis [10]. Furthermore, the combined need for dialysis and ICU care defines a group of patients with an even poorer prognosis.

Similar to our finding, the reported rate of mortality of HAAKI ranges from 25% to 70%. Mortality in ICU in this study was in accordance with earlier studies where that ranges from 60.3 to 76.2%. The mortality in the medical unit (37%) was higher in contrast to other studies (14-24.8%) [11].

CONCLUSION:

It is concluded that the analysis of factors like (TDDM2, Nephrotoxic Drugs, Sepsis, and Hypotension & Volume blood loss) showed an

increase in mortality according to the proportion percentages (32.9%, 69.3%, 67.1%, 67.1%, and 29.5% respectively). And out of 173 total numbers of patients 105(61%) patients were survived.

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