

**Original Article****A PROSPECTIVE STUDY OF INCIDENCE AND OUTCOME OF ACUTE KIDNEY INJURY PATIENTS ADMITTED IN MEDICAL ICU OF TERTIARY CARE CENTER**¹ Dr. Rakesh Patel ² Dr. Santosh Singh ³ Dr. Rubina Vohra ⁴ Dr. Datta Jude^{1,2,3,4} Assistant Prof. Dept of Medicine SSMC

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ABSTRACT

Background:- acute kidney injury (AKI) is characterized by a rapid decline in glomerular filtration rate over hours to days. Before 2004 there more than 35 definitions in medical literature for AKI, so a wide range of incidence estimates for AKI from 1 to 25% of ICU patients and has led to mortality rate from 15 to 60%. Aims and objectives:-1. To study the association between AKI and death in MICU patients. 2. To study the age and sex distribution of AKI in MICU patients and their correlation with outcome. Materials and methods:- The present study was carried out among patients of MICU of sanjay Gandhi hospital Rewa m.p. from January 2015 to December 2017. Total 5412 patients taken out for the study, of which 316 was AKI. Results:- The incidence of AKI was 5.8% in MICU and No difference was found between male and female in AKI, death in AKI patient was very high than non AKI patients. Conclusion:- the incidence of AKI is nearly 6% in our study and associated with significant mortality than non AKI patients irrespective of age and sex distribution.

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Introduction

Acute kidney injury (AKI) is characterized by a rapid decline in glomerular filtration rate (GFR) over hours to days. In medical ICU for purpose of diagnosis and management cause of ARF are generally divided into three major categories:

1. Disease that cause renal hypo perfusion (prerenal AKI) (~55%).
2. Disease that directly involve the renal parenchyma (renal AKI) (~40%).
3. Disease associated with urinary tract obstruction (post renal AKI) (~5%).

The pattern of acute renal failure in India is changing albeit at a slower pace compared to that on developed countries. The most common etiologic factor of AKI in MICU is sepsis followed by acute diarrhea, malaria (in India), cardiogenic shock and obstructive uropathy.

In 2004 the Acute Dialysis Quality initiative (ADQI) work group set forth a definition and classification system for ARF, described by the acronym RIFLE (Risk of renal dysfunction, Injury to the kidney, Failure or Loss of kidney function, and End stage kidney disease)

INCLUSION CRITERIA

Either gender

Adults above the age of 18 years

Patients diagnosed as cases of Diabetes Mellitus type 2

EXCLUSION CRITERIA

Patients diagnosed with Type 1 Diabetes Mellitus.

Any respiratory exacerbation/ worsening of symptoms in the last 4 weeks

Poor subject co-operation.

Debilitated patients.

Congestive cardiac failure, coronary artery disease, valvular heart disease.

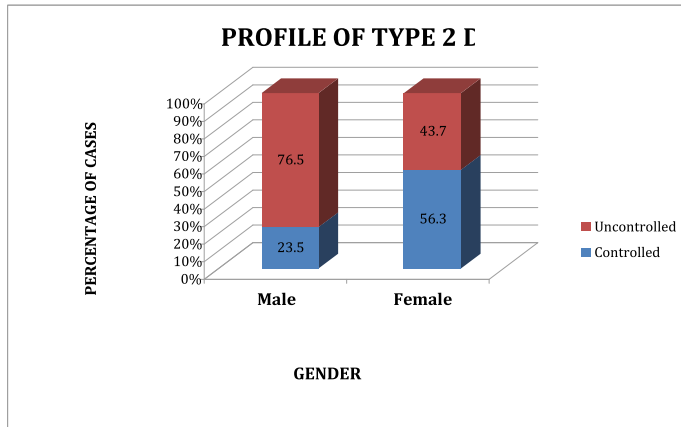
Sputum positive pulmonary tuberculosis.

RESULTS**1) Genderwise distribution**

Gender	No. of Cases	Controlled No. %	Uncontrolled No. %
Male	68	16 23.5	*52 76.5
Female	32	18 56.3	14 43.7

(Table 1) By Chi Square Test the p value was found to be 0.042, which is statistically significant

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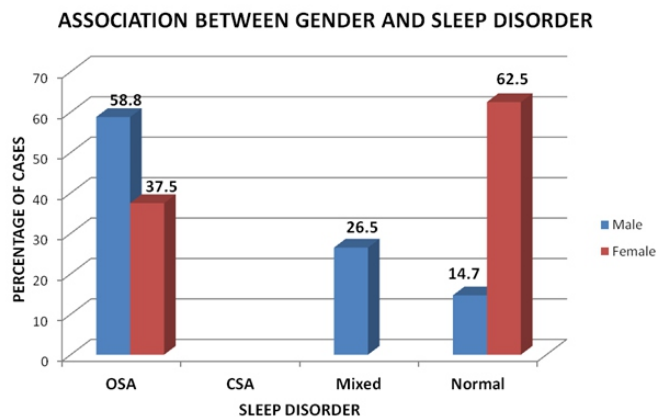


Graph no 1

2) ASSOCIATION BETWEEN GENDER AND TYPE SLEEP DISORDERS

Gender	No. of Cases	Sleep Disorder					
		OSA	CSA	Mixed	Normal		
		No. %	No. %	No. %	No. %	No. %	No. %
Male	68	40 58.8	L? -	18 26.5	10 14.7		
Female	32	12 37.5	L? -	L? -	20 62.5		
P values	NA	0.1592	-	*0.0230	*0.0006		

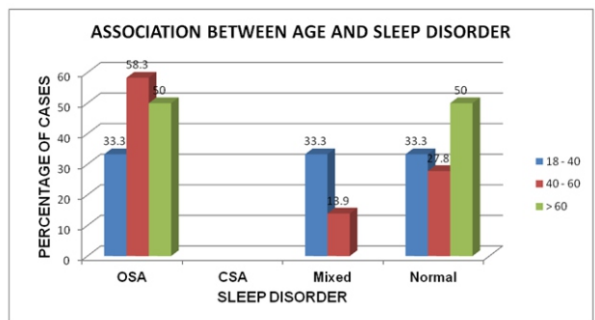
(Table 2)By Chi square test , the association was found to be statistically significant.



3) ASSOCIATION BETWEEN AGE AND SLEEP DISORDER

Age group (in years)	No. of Cases	Sleep Disorder							
		OSAS		CSA		Mixed		normal	
		No.	%	No.	%	No.	%	No.	%
18 – 40	24	08	33.3	L? -		08	33.3	08	33.3
40 – 60	72	42	58.3	L? -		10	13.9	20 27.8	
>60	04	02 50.0		L? -		L? -		02 50.0	
P values	NA	0.182		L?		0.334		0612	

(Table 3)By Chi Square Test the association was found to be not significant

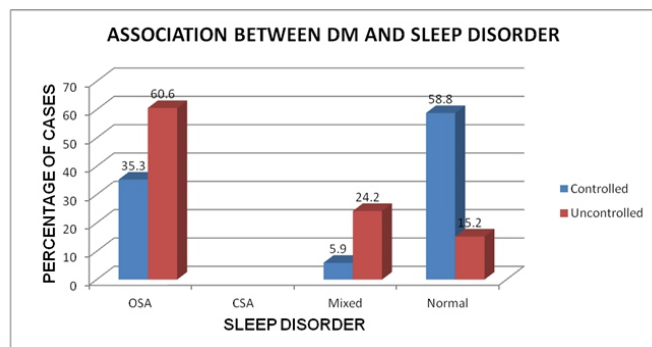


Graph no 3

4) ASSOCIATION BETWEEN DM AND SLEEP DISORDER

DM	No. of Cases	Sleep Disorder							
		OSAS		CSA		Mixed		Normal	
		No.	%	No.	%	No.	%	No.	%
Controlled	34	12	35.3	L? -		02	05.9	20	58.8
Uncontrolled	66	40	60.6	L? -		16	24.2	10	15.2
P values	NA	0.0897		-		0.1094		*0.0014	

(Table 4)By Chi Square test , the association was found to be statistically significant



Graph no. 4

DISCUSSION

The study was conducted on 100 patients attending our OPD who were diagnosed with Diabetes Mellitus. The patients were evaluated for the presence of sleep disorders by sleep studies. Apnea hypopnea Index(AHI) was used to define the presence of OSA, an AHI of more than 5 was considered to be suggestive of OSA. Out of 100 patients included, 68 were males and 32 were females. It was found that out of 68 males, 40 (58.8%) had OSA, 18 (26.5%) CSA and 10 (14.7%) had normal sleep study. Of the 32 females, 12 had OSA and 20 had normal sleep study. Chi square test was applied to find out statistical correlation of gender and sleep disorders. Males showed a higher occurrence of OSA as compared to females, however the difference was not statistically significant (p value= 0.1592). However, the occurrence of Mixed sleep apnea was statistically higher in males (p = 0.0230) as compared to females. Okada T(1) et al carried out a study to compare incidence of OSA in males and females. Study found that 35 Sleep Apnea syndrome (0.53%) among 6554 males and 5 sleep apnea syndrome patients (0.08%) among 6233 females. Our study corroborates the findings of this study.

Adults were selected for our study. A correlation was sought between Sleep disorders and age. It was observed that OSA was more common in 40-60 yrs age group but the difference was not significant (p =0.182). However the findings of study by Bixler et al(2) found that OSA is more common in older age groups as compared to middle age. The findings in our study were not significant probably because of the small sample size.

Our study attempted to find correlation of Diabetes Mellitus with sleep disorders. 100 patients having Type 2 Diabetes Mellitus were selected and they were subjected to polysomnography study.

Of the 100 patients included in our study 66 had uncontrolled Diabetes Mellitus and 34 had controlled DM. Of the subjects with uncontrolled DM 40 (60.6%) had OSA. Thus we observed that Sleep Disorders were more common in patients of uncontrolled DM and amongst the sleep Disorders, OSA was the most frequent.

Out of the 34 patients who had controlled DM, 20 (58.8%) had a normal polysomnography study, 12 (35.3%) had OSA and 2 (5.9%) had mixed sleep apnea. Thus we observed that patients with controlled Diabetes Mellitus had a statistically significant occurrence of Normal polysomnography study.

West et al reported a the prevalence of sleep apnea syndrome was 23% in a cohort of 938 Diabetic men.(3)

Jorge Vale et al(4) conducted a study in which it was observed that obstructive sleep apnea is more severe in type 2 DM patient with poor glycemic control. Similar findings were obtained in our study.

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