

ORIGINAL RESEARCH**Relationship between the study population's demographic profile and the frequency of discrepancy-convicted nephropathy in the Northern India Hospital admitted in coronary care unit****¹Dr.Zaffar Kawoosa, ²Dr.Wasim Salman****^{1,2}Assistant Professor, Govt. Medical College, Baramulla, India****Correspondence:****Dr. Zaffar Kawoosa****Assistant Professor, Govt. Medical College, Baramulla, India****Email: drzaffarkawoosa@rediffmail.com****Received: 26 September, 2022****Accepted: 25 October, 2022****ABSTRACT**

The present prospective study on “incidence of contrast-induced nephropathy” was conducted on the patients admitted in the cardiac care unit. Total of 200 patients were taken. All the subjects included in the study underwent coronary / renal angiography using 50-60 ml of iohexol non-ionic radiopaque contrast media. All the patients were subjected to a detailed history, clinical examination and laboratory investigations which were recorded in the predesigned performa for this study. Following observations were made, More male patients (110; 55%) were observed than female patients (90; 45%) during the study period. Male to female ratio was 1.2:1. Most male patients 36 (32.7%) were observed in 50-59 years age group, followed by 28 (25.5%) in 60-69 years age group, followed by 17 (15.5%) in > 70 years age group. Similarly, female patients were 29 (32.22%) in 50-55 yr age group, followed by 20 (22.22%) in 60-69 years age group followed by 16 (17.77%) in > 70 years age group. Conclusion: Contrast media (CM) are increasingly used in diagnostic and interventional procedure. This results in the rising incidence of iatrogenic renal function impairment caused by exposure to CM, a condition known as CIN

Key words: Nephropathy, coronary care unit, demography**INTRODUCTION**

Contrast-Induced Nephropathy (CIN) is defined as a 25% increase in serum creatinine from the baseline value or an absolute increase of at least 0.5 mg/dl which appears within 48 hrs after the administration of radiographic contrast media and is maintained for 2-5 days (1). CIN is the third leading cause of hospital – acquired renal failure (2). CIN is significant but underestimated cause of iatrogenic acute renal failure in clinical practice. CIN is also known as contrast nephropathy / contrast – nephrotoxicity / contrast media nephropathy / contrast agent nephropathy. The exact underlying mechanism of nephrotoxicity is likely to involve the following pathogenic factors:

INTRINSIC CAUSES

1. Increased vaso constrictive forces
2. Decreased local prostaglandin and nitric oxide mediated vasodilation.
3. Direct toxic effect on renal tubular cells with damage caused by free radicals.
4. Increase oxygen consumption

5. Increased intra-tubular pressure secondary to contrast culminating in renal medulla ischemia.
6. Intrinsic causes act in concert with harmful extrinsic pre-renal causes such as dehydration and decreased effective intravascular volume to increase the risk of nephrotoxicity.

RISK FACTOR FOR THE DEVELOPMENT OF CIN

FIXED

(NON-MODIFIABLE) RISK FACTORS

1. Old age
2. Diabetes mellitus
3. Pre-existing renal failure
4. Advanced CHF
5. Low LVEF
6. Acute myocardial infarction.
7. Cardiogenic shock

MODIFIABLE RISK FACTORS

1. Volume of contrast media
2. Hypotension
3. Anemia
4. Dehydration
5. ACE inhibitors
6. Diuretics
7. NSAIDS (3)

CLINICAL FEATURES

CIN most commonly manifests as a non-oliguric and asymptomatic decline in renal functions (4). The serum creatinine levels begin to rise within 24 hrs after administration of contrast medium. Creatinine levels typically peaks on 2 and 3 day following contrast, returns to baseline within 10-14 days (5). Oliguric acute renal failure requiring hemodialysis can also occur. This condition presents with oliguric within 24 hr of contrast administration and typically persists for 2-5 days (6). Morbidity and Mortality rates are significantly higher in this group of patient when compared with those who have non-oliguric renal failure (7).

MATERIALS AND METHODS

The present prospective study on “incidence of contrast-induced nephropathy” was conducted on the patients admitted in the cardiac care unit of the tertiary care Hospital in North India. The patients of acute coronary syndrome in whom coronary angiography was indicated comprised the study population. Total of 200 patients were taken. All the subjects included in the study underwent coronary / renal angiography using 50-60ml of iohexol non-ionic radiopaque contrast media.

METHODS

All the patients were subjected to a detailed history, clinical examination and laboratory investigations which were recorded in the predesigned performa for this study.

INCLUSION CRITERIA

1. Age > 19 years of either gender
2. Acute coronary syndrome: trop T +ve / Trop T- ve
3. With or without Diabetes Mellitus type 1 and type 2 on insulin or OHD

4. With or without Renal insufficiency- serum creatinine concentration > 1.5 mg/dl
5. With or without Multivessel disease

EXCLUSION CRITERIA

1. Intake of nephrotoxic drugs within previous 7 days
2. Renal transplantation and ESRD
3. History of serious reaction to iodinated contrast medium
4. Newly discovered unstable diabetes
5. Intravascular administration of an iodinated contrast medium within previous 48 hours
6. Pregnant/ lactating women

RESULTS

The present study was carried out in a tertiary care center. A total of 200 patients undergoing (coronary/ renal) angiography were selected and studied with respect to their demographic profile.

Table No. 1:- Rural/Urban Distribution of Patients

S.No.		Male	%	Female	%	Total
1	URBAN	72	65.5	50	55.5	122
2	RURAL	38	34.5	40	44.5	78
	TOTAL	110	100	90	100	200

Most patients were from urban background with (61%) and (39%) belonged to the rural areas

Table No. 2: Gender wise distribution of Patients

S.No.	Gender	Number Of Patients	Percentage %
1	MALE	110	55
2	FEMALE	90	45
	TOTAL	200	100

More male patients were observed than female (55%) during the study period.

Table No. 3:- Age and Gender wise distribution of patients.

S.no.	Age(years)	Male		Female		Total
		NO.	%	NO.	%	
1	19-29	5	4.6	4	4.44	9
2	30-39	6	5.4	5	5.55	11
3	40-49	18	16.3	16	17.77	34
4	50-59	36	32.7	29	32.22	65
5	60-69	28	25.5	20	22.22	48
6	>70	17	15.5	16	17.77	33
		110	100	90	100	200

Most male patients were observed in 50-59 years age group, followed 60-69 years age group, followed by > 70 years age group. Similarly, female patients in 50-55 yr age group, followed by 60-69 years age group followed by > 70 years age group.

DISCUSSION

CIN is the third leading cause of hospital-acquired renal failure. CIN is significant but underestimated cause of iatrogenic acute renal failure. An overall incidence of CIN in general population is reported to be 0.6-2.3%. Incidence rate may vary from 0% to 90% depending on the presence of risk factor, most notably chronic renal insufficiency, diabetes mellitus, age > 70 yr, and high contrast volume administered (3) Thirty-day mortality rate was 16.2%,

compared with 1.2% for patients who did not develop CIN & 1-yr mortality rate (23.3%) compared with those who did not develop CIN, (8). We have carried out a hospital based, descriptive study in 200 patients. In this study, females comprise 90 and males comprise 110, maximum were in the age group of 50-59 years followed by the the age group of 60-69 years and > 70 yr age group. It was found that males had higher incidence of coronary artery disease and also it is a male dominance society. So male population was higher than female population.

CONCLUSION

Contrast media (CM) are increasingly used in diagnostic and interventional procedure. This results in the rising incidence of iatrogenic renal function impairment caused by exposure to CM, a condition known as CIN.

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