

**A STUDY OF OUTCOMES OF PARAQUAT
POISONING WITH AKI - FROM A TERTIARY
CARE REFERRAL HOSPITAL, SOUTH INDIA.**

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INTRODUCTION:

Paraquat is commonly used as herbicide in India

Suicidal paraquat consumption- high mortality.

Generates free radicals –damages cellular organelles and membranes of many organs- respiratory epithelium and renal tubular cells.

No specific antidote-steroids/cyclophosphamide/antioxidants to reduce free radical damage.

AIMS AND OBJECTIVES

To study the outcome of patients with acute kidney injury following Paraquat poisoning and role of RRT in patients with AKI (Acute Kidney Injury).

Patients and method

- **Patients and methods:** A retrospective observational study of 60 cases of paraquat poisoning with renal dysfunction from January 2019 to August 2021 referred to department of Nephrology Gandhi Medical college, Secunderabad were included in our study. Primary outcomes of the study are mortality, secondary outcomes are renal recovery.
- Analysis was done regarding demographic parameters, initial presentation, need for ventilator support, indication, duration and outcomes of RRT, duration of hospital stay and outcomes and cause of death.

RESULTS

Out of 60 patients included in the study, males were 42 and females were 18. Mean age among males was 25.71 ± 6.45 yrs and among females was 27.00 ± 7.15 yrs.

Among clinical symptoms and signs ,oliguria was seen in 35(63%) vomiting was seen in 25(41.7%%), dysphagia and oral ulcers accounted for 32 (52.89%) patients , icterus in 3 (6.67%), altered sensorium in 2 (4.44%)and malena in one (2.22%) patient each.

Oliguric AKI was present among 35(57.78%) patients, non-oliguria in 24 (40.00%) patients and anuria in one(1.72%) patient

TYPE OF AKI	PERCENTAGE
OLIGURIC AKI	58.3%
NON OLIGURIC AKI	40%
ANURIC AKI	1.7%

- Among the patients 54 (86.45%) underwent HD, 3 Patient underwent PD (1.55%), No RRT was required in 3 (11.9%) patients.
- Among the patients who underwent HD 29(39.1%) patients had full recovery .

TYPE OF RRT	NUMBER	PERCENTAGE
HD	54	90%
PD	3	5%

- Out of 60 patients 25 patients required ventilator support during hospital course.
- 13 patients had elevated liver enzymes and 19 had features of MODS.
- 22 patients survived out of 60 patients with comprehensive care.



Characteristics	Number (n=60)	Percentage (%)
<u>Sex:Male</u>	42	70.0
Female	18	30.0
Presenting Symptoms		
Abdominal pain	13	21.7
Oliguria	35	58.3
Vomiting	25	41.7
Icterus	3	5.0
Oral ulcer	23	38.3
Dysphagia	8	13.3
Renal symptoms		
Anuria	1	1.7
Non-oliguria	24	30.0
Oliguria	35	58.3
Urine Albumin		
Nil	38	63.3
Trace	20	33.3
Present (+ /++)	2	3.3
Type of RRT		
HD	54	90
PD	3	5.0
No RRT	3	5.0
Ventilator support	25	41.7
Cause of Death		
MODS	19	31.7
Respiratory failure	17	28.3
Sudden cardiac death	1	1.7
Outcome		
Death	38	63.3
Recovered	22	36.7

Characteristics	Death (n=38)	Recovery (n=22)	p-value
Age	25.13 ± 6.70	31.09 ± 13.23	0.059
Consumption amount	93.16 ± 26.52	38.63 ± 11.25	0.0001*
SBP	119.47 ± 10.64	122.91 ± 10.49	0.231
DBP	76.32 ± 7.50	79.09 ± 8.11	0.185
Latent time to referral	7.13 ± 1.26	4.95 ± 1.49	0.0001*
Day stay	6.82 ± 3.86	9.41 ± 6.80	0.113
Total day	13.96 ± 4.25	14.36 ± 7.09	0.810
S. creatinine at admission	6.57 ± 2.49	6.02 ± 2.51	0.414
Hb	11.68 ± 1.77	11.23 ± 1.09	0.230
WBC	11834.21 ± 3902.89	9500.00 ± 2107.36	0.004*
K+	4.26 ± 0.47	3.91 ± 0.51	0.009*
PH	7.34 ± 0.07	7.35 ± 0.07	0.580
HCO3	13.62 ± 4.59	14.99 ± 4.08	0.253
PCO2	24.47 ± 4.87	26.19 ± 5.97	0.231
PO2	79.89 ± 17.87	91.68 ± 14.06	0.010*
TB	4.20 ± 3.46	1.99 ± 1.86	0.002*
DB	2.71 ± 2.23	1.15 ± 1.37	0.001*
SGOT	97.39 ± 62.74	45.04 ± 33.50	0.0001*
SGPT	105.05 ± 66.60	57.27 ± 62.99	0.008*
ALP	139.74 ± 64.24	144.23 ± 180.42	0.889
Anion gap	14.70 ± 4.76	16.87 ± 7.03	0.216
Urine output	518.42 ± 481.19	968.18 ± 450.80	0.001*
Duration of RRT	3.79 ± 2.29	3.71 ± 2.00	0.900

Limitations

small sample size

efficacy of hemoperfusion was not studied.

Doesn't include data on patients without having AKI

conclusions

- Prevalance of Paraquat AKI among all admissions-1%
- Prevalance of Paraquat AKI among paraquat admissions-1%
- Factors affecting mortality are amount of consumption ,latency in referral to hospital and MODS.
- Factors affecting renal recovery are presence of oliguria.

Thank you