Introduction:

Paraquat(chemically a dipyridyl compound) isa herbicide.It acts by producing local and systemic toxicity.Plasma and urine paraquat levels are strongly associated with mortality in acute poisoning. The usual mode of mortality in acute setting is multiorgan dysfunction while in sub-acute stage, lung fibrosis is the cause.The standard principles of resuscitation like assessment and management of airway,breathing and circulation should generally be followed as per routine guidelines. Mucosal toxicity or the presence of vomitus can severely compromise the airway. Metabolic acidosis, aspiration and/or acute alveolitis can produce respiratory failure. Oxygen should be used cautiously as the worse oxidative stress greatly increases lethality in animal models.

Case report:

A 25-year-old male patient with no significant medical history presented to ER with alleged history of consumption of paraquat. He was in a semi-conscious state with a BP of 128/70mm Hg, Pulse 90/min, RR 18/min and maintaining spo2 100% on room air.In the ER,IVFluid NS @ 100ml started after securing peripheral line with 18 G canula, gastric lavage with NS done. Activated Charcoal 50 Grams stat given. Inj. N. Acetylcystine (NAC) 8g IV stat given. Patient was shifted to ICU for further management.Initial Investigation showed Hb 14.7,WBC 14.5INR 1.23,S. Sodium 136,S. Potassium 4.17, S. creatinine 1.08ABG: pH 7.451, Pco_2 35.2, Po_2 120.2, HCO_3 24.5. Charcoal hemoperfusion was started within 9 hours from ingestion.Patient was also started on N-Acetylcysteine infusion,Vitamin C,Vitamin E,Thiamine, Steroid and other supportive medications. Patient developed acute renal failure which was treated conservatively.Patient complained of pain on swallowing. He was kept nil per orally.Endoscopy was done which revealed erosive esophagitis.PEG was planned but thepain on swallowing decreasedsignificantly. So liquid diet was startedon day 4 of admission. Patient condition improved significantly and was shifted to ward on day 5.

Discussion:

Hsu etal. studied the role of early hemoperfusion (<4hrs)on survival in severe Paraquatpoisoning.They found that early hemoperfusion<4hrsor<5hrs was associated with a 62% and 41% reduction of relative risk of mortality of all severely poisoned patients,respectively. In our case we started the patient on charcoal

haemofiltration after 9 hrs (approx.) of ingestion. The duration of haemofiltration was for 4 hours and done only once, which was well tolerated by the patient.Hypotension in these type of case usually responds to boluses of fluids. Renal failure usually developes during the first 24 hrs period so maintainance of volume status is very much crucial. Consciousness generally maintains in a normal level.Any impairment should prompt either co-ingestion of other agents(e.g.ethanol) or severe toxicity causing hypoxia,hypotension and severe acidosis.. This was the first patient survived in our centre with paraquat poisoning. Inspired by the result, we decide to publish the case. A written consent was taken before publishing.

Conclusion:

Consumption of significant amount of paraquat leads to extremely high mortality. Interestingly in our case we found charcoal haemofiltration along with anti oxidants can save some valuable lives, so we recommend strongly for early haemofiltration of such patients.

References:

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3243009/#
2. https://reference.medscape.com/medline/abstract/28704509

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