

Vakkalanka JP, King JD, Holstege CP. Hemodialysis is Likely Underutilized in Severe Aspirin Poisoning. American College of Medical Toxicology. 2015, Clearwater, Florida.

Background

Salicylate poisonings, despite having established treatment protocols, continue to result in a substantial number of analgesic-related poisoning deaths annually. Individual providers are unlikely to encounter many salicylate poisonings during their career. Concerns have been raised in the literature regarding nephrologists' recognition of the need for prompt hemodialysis in severe cases of salicylate poisoning. We aimed to examine the frequency that hemodialysis was performed in cases of significant salicylate poisoning, and whether dialysis was associated with differences in mortality.

Methods

The National Poison Data System (NPDS), comprising all poisoning cases reported to United States poison centers, was queried for all significant single-agent aspirin poisoning cases between 2008-2012, defined as those with moderate, major, or fatal medical outcomes. Retrieved data included patient age, gender, chronicity of poisoning, reason for ingestion, clinical effects, and treatments performed. Data were analyzed via chi-squared analysis.

Results

8,568 cases of aspirin poisoning were identified, of which a total of 110 (1.3%) resulted in death. Agitation, coma, diaphoresis, hyperthermia, tachypnea, seizures, and cardiac arrest were more prevalent in patients with death as opposed to major outcomes. In patients who died, hemodialysis was carried out in 25.5% of cases versus patients with major outcomes in 36.9% of cases ($p = 0.018$) with a relative risk for death of 0.62. Patients with renal failure (defined as "clinically significant azotemia and loss of renal function" as judged by poison center personnel) were not significantly more likely to receive hemodialysis than those without renal failure. Intubation was carried out in 70.9% of patients who died versus 26.3% of patients with major outcomes. All other therapies (e.g., alkalinization, charcoal, parenteral fluids) were not significantly different between the two groups.

Conclusions

In our retrospective cohort, hemodialysis was associated with patient survival in cases of severe aspirin poisoning, and was only utilized in 25% of patients who died from aspirin poisoning. Hemodialysis may also be underutilized in patients with impaired kidney function and aspirin poisoning. Our results suggest that hemodialysis is underutilized in severe salicylate poisonings.