

Frischtak HL, King JD, Vakkalanka JP, Holstege CP. Clinical Characteristics of Fatal Salicylate Poisonings. Oral presentation at the International Congress of the European Association of Poisons Centres and Clinical Toxicologists. 2015, St. Julian's, Malta.

Objective: Death related to severe salicylate poisoning may be preventable with timely correction of metabolic derangement and prompt hemodialysis (HD) (1); however, HD may be delayed or foregone in many cases. Our group's (unpublished) analysis of data from the United States National Poison Data System (NPDS) demonstrates that HD was used less often in patients with salicylate poisoning who died compared with survivors with major clinical toxicity (25.9% vs. 36.9%, $p = 0.018$). In order to investigate factors that may influence mortality after aspirin poisoning, fatalities reported to the NPDS were reviewed in detail.

Methods: The NPDS was queried for all fatality abstracts from single-agent aspirin poisoning deaths occurring during 2008-2012. Fatality abstracts were explored for sixteen specific patient care characteristics by two trained study investigators. Need for HD was determined according to the EXTRIP workgroup's criteria (2). Discrepancies in data collection were resolved through independent review by a third investigator.

Results: One hundred cases of aspirin poisoning deaths were identified, of which 83 were a direct consequence of aspirin poisoning. Death occurred prior to initiation of HD in 78.3% of cases. Failure to identify the need for and/or attempt to perform HD occurred in 32.5% of cases. There was an identifiable >6 hour delay in initiation of HD in 8.4% of cases. Intubation was shortly followed by death in 13.3% of cases. Care was withdrawn in patients who had attempted suicide in 8.4% of cases.

Conclusion: This study represents the largest cohort of aspirin-related deaths of which we are aware. Factors that likely played a direct role in patient deaths included failure to perform hemodialysis, delay in initiation of hemodialysis, and intubation, among others. Given the large number of cases where the absence or delay of hemodialysis was present, it is crucial that nephrologists, emergency physicians, and intensivists are aware of and act upon indications for emergent hemodialysis in salicylate-poisoned patients.

References:

1. Chapman BJ, Proudfoot AT. Adult salicylate poisoning: deaths and outcome in patients with high plasma salicylate concentrations. *Q J Med* 1989; 72:699-707.
2. EXTRIP workgroup. Executive summaries of recommendations: salicylates poisoning. Accessed at <http://www.extrip-workgroup.org/#!/recommendations/cy1f>.