

01. Characteristics of Corticosteroid Use Across Various Toxic Exposures

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Background: Corticosteroids are used for many acute and chronic diseases across many specialties. Corticosteroid use, however, as therapy for toxicologic exposures is not well described. Therefore, the purpose of this study is to characterize corticosteroid use as practiced by medical toxicologists for toxic exposures using the Toxicology Investigators Consortium (ToxIC) registry.

Research Question: In what exposures do toxicologists use corticosteroids as treatment?

Methods: This is a retrospective review of prospectively collected registry data. All cases from January 1, 2010 to January 1, 2017 in which corticosteroids were administered as a treatment and were documented as such in the ToxIC database were extracted and analyzed. Age, gender, primary exposures, treatments administered, chronicity, clinical signs, and symptoms and outcomes were collected. Descriptive statistics were performed.

Results: There were 303 cases identified, and of these, the mean age was 34.2 years (range was < 2–89 years) and 171 (56.4%) were male. Of the 303 cases in which corticosteroids were used for treatment, the most common exposures were envenomations ($N = 67$, 24.2%), analgesics ($N = 20$, 7.2%), opioids ($N = 18$, 6.5%), and gas/vapor/irritant/dust ($N = 16$, 5.8%). Corticosteroids were used in 14 (5.1%) household exposure and in 13 (4.7%) caustic exposures. There were 26 (8.6%) cases of corticosteroid use without documentation of the specific exposure. Interestingly, in 24 of the envenomation cases, corticosteroids were given with administration of antivenom. The three most frequently used treatments in conjunction with steroids were *N*-acetylcysteine ($N = 28$), CroFab ($N = 24$), and sodium bicarbonate ($N = 21$). There were 15 deaths in the entire cohort.

Discussion: Cases involving envenomations received corticosteroid treatment most commonly. Some have argued that corticosteroids in combination with antivenom may be effective in decreasing local tissue edema, thereby reducing incidence of sequelae. Others support use of corticosteroids in the treatment of anaphylaxis secondary to serum sickness after administration of antivenom. Corticosteroid use in other toxicologic exposures such as in analgesics, opioids, and antimicrobials is reported without clear indication.

Conclusion: Indications for corticosteroid use in toxic exposures need to be studied further.