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76. Most Rattlesnake Envenomation Patients Receive Multiple Doses of Antivenom

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Study Objective: Antivenom is dosed to clinical effect. Previous reports from a smaller dataset showed that most patients envenomated by rattlesnakes require multiple doses of antivenom, regardless of whether they were treated with Fab or $F(ab')_2$ antivenom. This study expands previous work to incorporate 2020 data, and describes the dose and timing of both ovine Fab and equine $F(ab')_2$ antivenom administration for rattlesnake victims.

Methods: We performed a *post hoc* analysis of prospectively collected observational data. Rattlesnake envenomation cases in the American College of Medical Toxicology (ACMT) Toxicology Investigators' Consortium (ToxIC) North American Snakebite Registry (NASBR) treated in 2019 and 2020 were stratified by antivenom administered. Patients receiving both antivenoms were excluded from this analysis. Descriptive statistics and graphical presentation were used to understand total antivenom dosing.

Results: Among 196 rattlesnake envenomation patients receiving antivenom, 77 patients (39.3%) received Fab antivenom, 59 (30.1%) received $F(ab')_2$ antivenom, and 60 (30.6%) received both products. Among patients receiving only Fab antivenom, the median total antivenom dose was 10 vials (IQR: 6 - 12), and 56 patients (72.7%) received more than one antivenom dose. The median interval between Fab doses was 6.0 (4.5 - 8.0) hours. The $F(ab')_2$ only group received a median of 18 (10 - 24) vials of antivenom, and 41 patients (69.5%) received multiple doses. The median interval between $F(ab')_2$ doses was 5.1 (3.5 - 8.5) hours. The mean (SD) total antivenom dose administered was 10.6 (5.5) vials of Fab and 19.1(9.3) vials of $F(ab')_2$ (ratio: 0.55; 95% CI 0.45 – 0.65).

Conclusion: Regardless of the antivenom used, most rattlesnake patients in the NASBR receive multiple antivenom doses. This analysis does not distinguish doses given for initial control (either antivenom), scheduled maintenance (Fab), or to treat recurrent venom effects (either antivenom), and do not account for pre-treatment severity.