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74. Analysis of Acute Hypersensitivity Reactions by Antivenom Type by Geographic Location in the North American Snake Bite Registry

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Background: No difference in incidence of acute hypersensitivity reactions (AHRs) between Fab and Fab2 antivenom after crotalid envenomation has been established. Galactose- α -1,3-galactose (α -gal) content in antivenom, four-fold higher in Fab2, may confer a risk of AHRs, particularly in geographic regions with increased α -gal syndrome (AGS).

Hypothesis: Fab2 is associated with increased AHRs in the ToxIC North American Snakebite Registry (NASBR); AHRs after antivenom are more common in high-AGS regions.

Methods: This is an analysis of prospectively collected data from the NASBR January 1, 2018 - December 31, 2022. Patients administered Fab or Fab2 on initial presentation after rattlesnake envenomation were included. High-AGS vs low-AGS regions were defined according to epidemiologic data. The primary outcome was incidence of AHRs after Fab vs Fab2 exposure. AHRs between high-AGS vs low-AGS regions were also examined. Bivariate differences in the number of exposures were analyzed.

Results: Eight-hundred-twelve unique cases were included. Five-hundred-nineteen received only Fab, 199 received only Fab2. Ninety-four cases received both antivenoms and were included in total Fab (n = 613; 67.6%) and Fab2 (n = 293; 23.3%) exposures. Fourteen-point-two percent of cases (n= 115) were in high-AGS regions. There was no difference in history of allergies or eczema, pretreatment for allergic reaction, or previous antivenom exposure between comparison groups. AHRs were reported in 4.1% (n = 33/812) of cases; 3.3% (n = 20/613) after Fab and 4.4% (n = 13/293) after Fab2 exposures (p = NS). 5.2% (n = 6) vs. 3.9% (n = 27) of AHRs occurred in high-AGS vs. low-AGS states (p= NS). Rash (70.0%) was the most common AHR reported. Epinephrine was given in 30.3% and antivenom was stopped in 42.4% of AHR cases. No cases reported AHRs to both antivenoms.

Conclusion: There was no statistical difference in AHRs between Fab and Fab2 antivenom exposures or high-AGS and low-AGS regions in the NASBR population. Low Fab2 utilization in high-AGS regions prior to 2021 limits conclusions.

