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10. Medical Toxicology: A Safety Net for Snakebite Victims

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Background: An estimated 5,000 – 10,000 snakebites are evaluated annually in US hospitals. Because of this relative infrequency, most physicians lack expertise in their management. Medical toxicologists, however, have specific envenomation training. The purpose of this study was to determine if bedside evaluation by a medical toxicologist during a subsequent hospital visit changed management in snakebite cases that were initially treated elsewhere by non-toxicologists.

Methods: This was a review of prospectively collected de- identified patient information reported to the North American Snakebite Registry (NASBR) by medical toxicologists providing bedside care for snakebite patients between January 1, 2018 and December 31, 2023. Patients who were discharged from a facility without a medical toxicologist and then represented to a facility with a medical toxicologist, whether directly or via transfer, were included. Data regarding patient demographics, clinical features, antivenom utilization, other interventions, and outcomes were reviewed.

Results: There were 1270 cases entered into NASBR during the study period. We identified 84 (6.6%) patients who met the inclusion criteria. Clinical information from the initial hospitalization was available in 35 (42%) cases. Medical toxicologists administered antivenom to 30 (86%) patients. No patients received antivenom during their initial hospital stay, which ranged from two to 264 hours with a median of six hours. Eight (23%) patients who returned to the original hospital or who presented to a different hospital lacking a medical toxicologist received antivenom prior to being trans- ferred to a hospital with a medical toxicologist. One patient received antivenom at the referring hospital for a bite from a snake that was subsequently identified as a nonvenomous garter snake. Several interventions that are not recommended for snake bites were performed at the hospitals without a medical toxi- cologist, including prolonged application of ice, antivenom administration following a bite from a nonvenomous snake, placing the affected limb below heart level, and prophylactic antibiotics. In the 49 cases for which data from the initial hospitalization were unavailable, the medical toxicologist treated 33 (67%) patients with antivenom, including five (10%) who received a dose from a transferring hospital.

Conclusion: In this study, most snakebite patients who had already been evaluated and discharged from another hospital were treated with antivenom by the medical toxicologist. This suggests that other physicians may have too high a threshold to treat with antivenom or are not monitoring patients for a sufficient length of time. Early consultation with a medical toxicologist may lead to quicker antivenom administration and recovery.