

Variation in Treatment Recommendations by US Poison Control Centers for Scorpion Envenomations

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Background: Scorpion stings accounted for more than 15,000 calls to US poison control centers (PCCs) in 2015. Numerous scorpion species are native to the southern US but the main one of medical concern is the Arizona bark scorpion (*Centruroides sculpturatus*). Although severe systemic effects are possible, local skin findings are rare. However, other native scorpion species can cause temporary local skin reactions. While retrospectively analyzing scorpion exposures reported to US PCCs, considerable variation in treatment recommendations for antibiotics and steroids were noted.

Methods: Scorpion envenomations reported to the American Association of Poison Control Centers' National Poison Data System from 2005-2015 were studied. A total of 185,402 records were analyzed for recommendations for antibiotics and steroids and were compared to reports of skin effects (e.g. edema and erythema). Only states with greater than 100 envenomations per year were included.

Results: There was wide variation in PCC recommendations for antibiotics and steroids. Arizona PCCs rarely recommended antibiotics (0.1%) or steroids (0.0%). In contrast, antibiotic recommendations in other states ranged from 0.6% (Georgia) to 44.9% (New Mexico) while steroid recommendations ranged from 0.1% (California) to 28.4% (Florida). Local dermal effects were rare in Arizona, with only 0.9% of calls recording edema or erythema. In other states, local effects were more prevalent: edema ranged from 5.5% (California) to 19.5% (Alabama) and erythema ranged from 6.6% (California) to 41.2% (Alabama).

Discussion: Scorpion envenomations reported to Arizona PCCs are rarely coded with local dermal effects and routinely do not result in recommendations for antibiotics or steroids. However, antibiotics and steroids are recommended more frequently in other states, where edema and erythema were also more common. There does not seem to be a strong correlation between these recommendations and clinical findings. Since local reactions to native scorpion stings are self-limited, it is unknown if these interventions are indicated or change patient outcome.

Conclusion: There is wide geographic variation in PCC recommendations for antibiotics and steroids following scorpion envenomation in the US. Further study may help elucidate the rationale for these recommendations.