OP4

Comparison of Venom Variations in Taiwan Habu and its Effects on Clinical Manifestations of Victims

Derek Y.W. Chiang

Taipei Veterans General Hospital, and The Foundation for Poison Control of Taiwan

Aim and objectives:

Bites from Protobothrops mucrosquamatus, commonly known as the Taiwan habu, are frequently reported in Taiwan. Given its widespread distribution and varied habitats, we embarked on an exploration of its envenoming effects and the potential variations in its venom.

Methodology:
Utilizing reversed-phase high-performance liquid chromatography coupled with mass spectrometry, we analyzed 163 venom samples sourced from both northern and southeastern Taiwan. This investigation separated and analyzed twenty-two primary protein factions, quantifying their contents in a semi-quantitative manner.

Results:
Our findings suggest that while differences in protein families were minimal, variations were apparent in acidic phospholipases A 2 s, serine proteinases, metalloproteinases, C-type lectin-like proteins, and other less prevalent venom components in P. mucrosquamatus. Furthermore, an evaluation of 209 patients hospitalized due to P. mucrosquamatus envenomation in either northern or southeastern Taiwan revealed notable disparities in local symptoms, notably ecchymosis and blistering.

Conclusions:
We delved into the mechanisms behind these local effects and potentially relevant venom components. Subsequent analyses indicated that certain venom components, displaying inter-population variations, might either individually or synergistically intensify these local effects. Consequently, our discovery of venom variations offers insights that can potentially enhance antivenom production and provide a more comprehensive understanding and management of P. mucrosquamatus bites.

OP5

Point of care D-dimer at admission as predictor for envenomation amongst snakebite victims: a single center prospective observational study

Dr Deo Mathew, Dr Siju V Abraham, Dr Sarah Paul, Dr Mohammed Rafi, Dr Appu Suseel, Dr Kassyap C K
Jubilee Mission Medical College, Kerala, India

Aim and objectives: This prospective observational diagnostic test study aimed to assess the diagnostic accuracy of D-dimer, a fibrin degradation product, measured at admission, in detecting envenomation in snakebite victims. Secondary objectives included evaluating serum D-dimer and myoglobin's diagnostic accuracy for detecting coagulopathy and any envenomation.

Methodology: The study was conducted in the Emergency Department of a tertiary care teaching hospital in Kerala, India, from March to December 2022. Ninety-two snakebite victims with written informed consent were enrolled, and point-of-care D-dimer testing was performed. Data on demographics, snake type, clinical syndromes, and coagulation study results were collected. D-dimer levels were measured using a fluorescence immunoassay test device, and clotting time and PT were assessed.

Results: Among the patients, 48 exhibited signs of envenomation, and 19 developed VICC. D-dimer levels positively correlated with prothrombin time(r=0.28), international normalized ratio(r=0.25), and activated partial thromboplastin time(r=0.27), while negatively correlating with fibrinogen levels(r=-0.22).
Envenomation cases had significantly higher D-dimer levels (100-5000, median: 1510, p <0.001) than non-envenomation cases (100-3750, median: 100, (p < 0.001) and average D dimer in patients with coagulopathy is higher (100-5000, median: 1960, (p < 0.001) compared to those without (100-4120, median: 109, (p < 0.001). A D-dimer cutoff of 240 ng/ml showed 80.9% sensitivity and 81% specificity for diagnosing envenomation. Multivariate logistic regression confirmed D-dimer's independent association with envenomation (OR = 17.4, 95% CI: 6.0-50.3, p < 0.001) and detecting VICC (OR = , 95% CI:, p < 0.001)

Conclusions: D-dimer is a reliable biomarker for detecting snake envenomation and predicting coagulopathy in snakebite cases. Early measurement of D-dimer levels enables timely administration of Anti-Snake Venom (ASV), potentially reducing complications and mortality. An optimal cutoff value of 240