

The Utility of Rotational Thromboelastometry (ROTEM) in Identifying Envenomation Following Cobra Bites

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The cobra is one of the highly venomous snakes in Sri Lanka. Cobra bites are not known to cause haemato-toxicity, except in some studies that have shown a transient coagulopathy by non-clotting 20-minute Whole Blood Clotting Test (WBCT20). Despite this, and its low sensitivity, WBCT20 is routinely used as the standard test to detect envenoming in patients following cobra bites. We investigated the usefulness, sensitivity and specificity of using ROTEM parameters compared to WBCT20 in identifying the coagulopathy of cobra bites. Seven (7) cobra bite patients were recruited as a part of larger study which was composed of Russell's viper, hump-nosed viper, common krait and non-venomous snakebite patients. Details of their clinical presentation, prothrombin time, WBCT20 and ROTEM were performed at presentation. All patients had neurological manifestations, yet none had clinically significant bleeding. All 7 cobra bite patients showed a clotted WBCT20, however, 6 patients showed an abnormality in ROTEM; prolongation of either EXTEM-CT, FIBTEM-MCF or both. EXTEM-CT showed a higher sensitivity (83%), accuracy (71%) and PPV (83%) in identifying cobra envenoming compared with WBCT20. Anti-venom serum was administered in 6 of the 7 patients in spite of clotted WBCT20s. In conclusion, ROTEM parameters were more likely to pick up subtle changes in coagulation and thereby envenomation, compared to WBCT20. The clinical utility of detecting abnormalities in ROTEM parameters and their usefulness in managing patients with cobra bite should be explored further.

Keywords: cobra, coagulopathy, rotational thromboelastometry, WBCT20