

Reliability of the 20 minute whole blood clotting test as an indicator of coagulopathy in patients envenomed by Sri Lankan Viperidae snakes

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Introduction

Snake bites carry a high rate of morbidity and mortality as a result of the local and multi systemic complications. There is an estimated 40,000 snake bites every year in Sri Lanka. Coagulopathy is one of the main complications caused by the venom of Viperidae. The toxic effect of the venom activates enzymatic pathways which results in crisis of homeostasis. The current practice of detection of coagulopathy is by the 20 minutes whole blood clotting time (20 WBCT). Coagulopathy also leads to the alterations of Prothrombin Time (PT), INR, Activated Partial Thromboplastin Time (APTT) and Thrombin Time (TT). A discrepancy between 20 WBCT and the coagulation profile has been observed in some instances. A recent study concluded that WBCT was not a good test to identify coagulopathy in Russell's viper envenomation.

Objectives

This study was conducted to identify the correlation between 20 WBCT and coagulation profile.

Methods

A prospective analytical study was carried out in all medical wards of the National Hospital Sri Lanka within a period of 6 months from January 2012. The diagnosis of the viper bite was based on visual examination of the snake or the syndromic approach. Serial 20 WBCT was done at the bed side and concomitant PT/INR and APTT was done at the hematology lab, NHSL. Information regarding the socio-demographic factors and the snake bite was gathered via interviewer administered questionnaires.

Results

17 patients were included in the study. Majority (58.8%) was male and mainly from Colombo suburbs. Commonest viper bite presentation was hump nosed viper (41%) and commonest area of bite was foot (70.6%). 41% of patients presented to the hospital within the first hour after snake bite. 76.5% had local complications and 53% had at least one systemic complication regardless of the type of viper. Out of them, 17.6% had neurotoxicity, 41.2% had nephrotoxicity while 29.4% had coagulopathy. There was no statistically significant correlation between the result of 20 WBCT and coagulation tests, PT ($p=0.856$) and APTT. ($p=0.361$)

Conclusions

Results of the current study suggested that there was no correlation between 20 WBCT and coagulation tests, PT and APTT in patients envenomed by Sri Lankan Viperidae snakes. Implications of this may be far reaching. Therefore the study will be continued recruiting a larger number of patients.