



Chapter I

Introduction

Rationale and Objective

The hemostatic disorders following crotalid snake bites are one of the common problems in clinical practices in Thailand. The common victims in this family are Green pit viper for the central part, and Malayan pit viper for the southern and eastern part of the country. Their venoms modify all steps of normal hemostasis: blood vessels, platelet function, blood coagulation, and fibrinolytic system, as well, but the definite pathogenesis of those disturbances remained incompletely understood. Our knowledge in this field of study may pilot and advance both the diagnostic implication, may result in improved treatment of serious snake bite poisoning (1); and the therapeutic view. Correlation of clinical manifestations and pathophysiologic processes may be more clarified. Additionally, venoms have proved to be useful agents in the study of the mechanisms of blood coagulation and platelet aggregation.

The objective of this study reveals the fractionation and demonstration of hematotoxic principles from Green pit viper (Trimeresurus popeorum) and Malayan pit viper (Calloselasma rhodostoma) venoms by DEAE-cellulose

chromatography. It will be mainly focused on hemostatic mechanism, including thrombin-like activity, fibrinolytic activity, platelet aggregation and hemorrhagic activity of crude venoms and venom fractions.

Significances

1. More understanding and explanation of pathogenesis of the hemostatic disturbances in Green pit viper and Malayan pit viper bite, which are common medical problems in Thailand, may be approached, especially in the view of clinical correlation.

2. This study is the first step for further advanced investigations :

2.1 Diagnostic implimentation: specific assay for identifying venom antigen in the body fluids of bitten victims.

Detecting specific venom antibodies are also helping to determine the extent of the problem in our country.

2.2 Therapeutic implimentation

2.2.1 for future rational treatments, preparation of more specific, monovalent, antivenoms for Green pit viper and Malayan pit viper bite

2.2.2 By immunological techniques, assessment of the potency and effectiveness of new and currently available antivenoms could be done.

2.2.3 Some venom principles would have been used as the therapeutic agents.

2.3 Examining the protective effects induced by previous exposure in man.

3. Some purified fractions could be prepared as useful agents in the study of the hemostatic mechanisms.

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