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Can Surgery in Patient with *Trimeresurus stejnegeri* Envenomation be Predicted in Emergency Department

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OBJECTIVE: *Trimeresurus stejnegeri*, a crotalinae snake with haemorrhagic venom, is responsible for the most common poisoning snakebites in southern Taiwan. Although a specific antivenin has been developed, surgical intervention is still needed in some patient because of the progression of tissue injury. The purpose of this study was to investigate the early predictors for surgery in patients with *Trimeresurus stejnegeri* envenomation.

METHODS: The medical records of patients presenting to the emergency department of E-Da hospital because of *Trimeresurus stejnegeri* envenomation between 2014 and 2018 were retrospectively reviewed. Clinical information was collected and analyzed between operation and non-operation groups.

RESULTS: During study period between 2014 and 2018, total 161 patients presented to emergency department of E-DA hospital with snakebite was enrolled. Among them, 90 patients (56%) with *Trimeresurus stejnegeri* bite, including 12 patients (13%) with operation and 78 patients (87%) without operation. Comparing between operation and non-operation groups, local wound ecchymosis (83.3% vs. 7.8%, $p<0.001$) is the significant sign relevant to the surgical group. However, there was no significant difference in time to arrive hospital and clinical laboratory test. All patients had received antivenom, but dosage of antivenom administration has no significant difference in operation and non-operation groups (3.6 vs. 2.8 vial, $p = 0.196$). The main cause for surgery was presented symptoms of acute compartment syndrome (91.7%), and those patients had received fasciotomy and skin graft. In addition, there was no bacterial growth in surgical wound culture. The duration of hospitalization is significant longer in surgical groups (10.3 vs. 1.5 days, $p<0.001$) and there was no mortality in both groups.

CONCLUSION: Patients with *Trimeresurus stejnegeri* bite present with local wound ecchymosis are at higher risk for surgical intervention.