



HUMP NOSED PIT VIPER SNAKE BITE INDUCED VICC UNRESPONSIVE TO ASV TREATED SUCCESSFULLY BY THERAPEUTIC PLASMA EXCHANGE: A CASE REPORT

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INTRODUCTION

- Hump nosed pit viper (HNPV) snakes are common in western ghats region of India and Srilanka¹.
- Their bites commonly cause local envenoming leading to local pain, swelling, and necrosis.
- Acute kidney injury is the most common systemic manifestation, and some patients may develop venom-induced consumption coagulopathy (VICC)
- Here we present a case report of a patient who developed VICC where ASV was ineffective, but was successfully treated with therapeutic plasma exchange (TPE).

CASE SUMMARY

- 48 year old male patient presented with alleged history of snake bite of hump nosed pit viper over his left ankle.
- The chief complaints were pain and swelling till mid leg region, progressive in nature, associated with redness.
- He received 20 vials of anti-snake venom in an outside hospital
- On examination, he was conscious and oriented, vital signs were stable, peripheral pulses were palpable
- Localised rise of temperature, tenderness and swelling were noted. Small bite mark was noted near left achilles tendon.
- Lab reports showed deranged PT (> 120sec) and APTT (25 sec). Thromboelastography showed flat line and severe hypocoagulable state.

- All these parameters indicated persistent VICC unresponsive to ASV.
- Envenomation is a category III indication for TPE according to ASFA. We decided to initiate TPE.
- TPV processed was 2842ml. A total of 4 normal saline, 2 albumin and 6 FFP units were used.
- VICC improved following plasma exchange as PT came down to 18 sec and TEG was normal.
- Patient was put on supportive medication and antibiotics.
- The swelling gradually reduced and patient condition improved considerably. Patient was discharged on day 4.

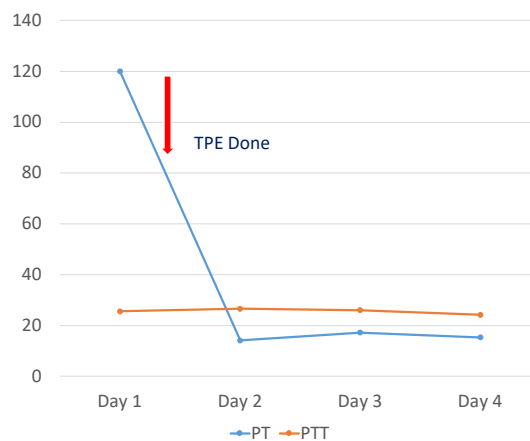


Figure 1: Coagulation screen performed during course of hospital stay

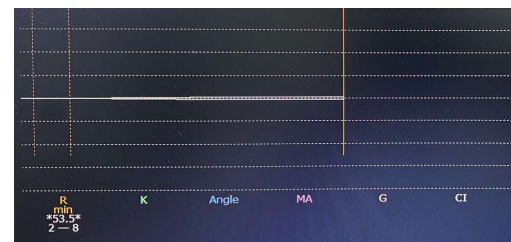


Figure 2: TEG performed on Day 1 after admission

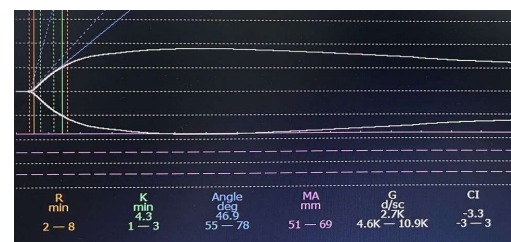


Figure 3: TEG performed on Day 2 after plasma exchange

DISCUSSION

- 6% of patients develop hemostatic dysfunction after hump-nosed viper bites¹.
- However, which patients will develop coagulopathy or die of envenoming is unpredictable.
- Antivenoms for these bites are currently not available.
- Therapy with fresh frozen plasma has doubtful efficacy in early correction of VICC.
- With no alternative treatment available currently, TPE is best option.

- It also has an advantage over only FFP transfusion, which involves larger volume of blood products transfusion and it takes many days to show the effectiveness.
- A study² from Srilanka also found that TPE is effective for thrombotic microangiopathy (TMA) in the early correction of platelet counts, MAHA, PT/INR, and WBCT20 in HNPV bites.

CONCLUSIONS

- Currently there is no specific antivenom against the venom of HNPV.
- Thus, TPE may be considered in the management of snake bite envenomation unresponsive to ASV. It helps to correct VICC and prevents further progression to TMA.

REFERENCES

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2. Rathnayaka RMMKN, Nishanthi Ranathunga PEA, Kularatne SAM, Sugathadasa K. Therapeutic Plasma Exchange for Venom-Induced Thrombotic Microangiopathy Following Hump-Nosed Pit Viper (Genus: Hypnale) Bites: A Prospective Observational Study. Wilderness Environ Med. 2022 Dec;33(4):386-398. doi: 10.1016/j.wem.2022.07.012. Epub 2022 Oct 13. PMID: 36244888.