Assessing the Role of Anti-Viper Serum in the Management of Viper Bites

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Introduction

VIPER BITES are very common amongst the inhabitants of the Northern State of Perlis. In fact, snake bites on the whole are a common medical emergency in our hospital. Many of these bites are by the Malaysian Viper, *Ancistrodon rhodostoma*. We have attempted in this paper to study the usefulness of Anti-Viper Serum (AVS) in the management of Viper bites.

Material and Methods:

The patients selected for study were those admitted to the male and female medical wards of our hospital from 15th October, 1972, to the end of February, 1973. Excluding known and proven cases of Cobra bites, 62 cases of snake-bite were admitted to our wards during this period. Of these, 29 cases were of viper bite with systemic manifestations of toxicity; the most important systemic manifestation of toxicity was prolongation of the clotting time. Out of these 29 cases, 21 were males and 8 were females. In addition to these 29 cases, there were 3 males and 3 females who had severe local swelling after viper bites, but no prolongation of clotting time.

Upon admission, a clotting time was performed on the patients. Since admissions often occurred late in the night, a simple ward method was devised to measure clotting time. 2 c.c. of venous blood were drawn into a plain, empty test-tube and the blood allowed to stand. Normally, blood would clot in 10-12 minutes; in cases of severe viper bites, the blood would not clot at all. If a patient was admitted before a period of 6 hours after a bite, a repeat clotting time was done after 6 hours had elapsed (from the time of the bite). If the clotting time was still normal, then repeat clotting times were done once every morning thereafter.

All patients were given an injection of ATT and analgesic like panadol; pethidine was reserved for the more severe cases. In those with a prolonged clotting time, diuretics, sodium bicarbonate (5 Grams 6 hourly) and plenty of oral fluids were routinely given to flush the kidneys and obviates any effects of haemolysis upon them. Injection Vit. K 10 mgm. daily was given to all patients of prolonged clotting time. In a few cases with severe bleeding and shock, blood transfusions were also given.

Locally, the wounds were dressed daily with plain, dry dressings. Antibiotics were not given routinely, except when there was infection. Any vesicles that formed were left alone. In severe cases, Papase was given to hasten the resolution of the swelling. The administration of AVS is dealt with in detail, below.

Patients were discharged from the ward when the clotting time had returned to normal (and stayed normal for 2 days) and the local swelling had subsided.

Administration of AVS:

AVS was not given to all patients with prolonged clotting time. It was reserved for the following:

(1) Those patients in shock.

(2) Patients with severe bleeding manifestations like gross haemoptysis and bleeding from gums.

(3) Patients with prolonged clotting time and marked local reaction who came soon after being bitten.

In our hospital, it is not uncommon for patients to seek admission 1-2 days after being bitten. Such patients were not given AVS even if they had prolonged clotting times if their general condition was good. In other instances, patients developed a prolonged clotting time after a couple of days in the ward; they, too, were not given AVS. All patients to be given AVS were first given a test-dose. If not sensitive, then 2 ampoules of AVS were given in 200 c.c. of Normal Saline over 45 minutes. The dose was repeated twice at 6 hourly intervals if the patients' condition did not improve.

Results:

Total Number of Patients with Prolonged Clotting Time: 29

Males .. 21
Females .. 8

Number of Patients given AVS:

Males .. 11
Females .. 5

Number of Patients not given AVS:
Males .. 10
Females .. 3

Period of Stay in Hospital:

(A) For Patients given AVS: Average: 11 days. (Table 1)

Patient No.	1	2*	3	7	8	9	10	11	12	13	14	15	16	17	26	27
Duaration of Stay (Days)	8	2	8	17	11	3	16	15	5	5	14	13	22	11	10	15

*Died.

Table 1

(B) For Patients **not** given AVS: Average: 10 days (Table II)

Patient No.	4	5	6	18	19	20	21	22	23	24	25	28	29
Duration of Stay (Days)	8	10	12	9	7	14	11	7	8	9	15	6	12

Table II

Time taken for clotting time to return to normal:

(A) With AVS: Average: 8.4 days (Table III)

Patient No.	1	2	3	7	8	9	10	11	12	13	14	15	16	17	27	26
Time for C T to become normal (Days)	AOR	Died	3	16	10	1	15	AOR	3	1	1	13	19	8	12	9

CT: Clotting Time
AOR Discharged at own risk

Table III

(B) Without AVS: Average: 7 days (Table IV)

Patient No.	4	5	6	18	19	20	21	22	23	24	25	28	29
Time for C T to become normal (Days)	1	7	12	6	5	13	8	ab	1	7	11	7	4

ab: Absconded

Table IV

MORTALITY OF SERIES: 1

Side effects of AVS:

3 male patients showed a local reaction to the test-dose of AVS. None of them was given a therapeutic dose of AVS and there was no mortality in any of them. 5 male patients showed no local reaction to a test-dose but all 5 collapsed after the AVS drip had been given. These patients developed urticaria, starting at the site of the drip and spreading all over the body. They also developed tightness of the chest and hypotension. None of these patients died and they responded well to the usual methods of treating anaphylactic shock.

Amongst the female patients, 2 were definitely sensitive to AVS and were not given therapeutic doses. One had equivocal local sensitivity, but was successfully given AVS. Another case was also sensitive to AVS; she had severe systemic toxicity. After desensitization, AVS was given under steroid cover, but the patient died. One female patient collapsed after the AVS drip had run for sometime, although she was not sensitive to the test-dose. She responded well to anti-anaphylatic treatment. It must be noted that all AVS used in these patients was well within its expiry period — 1970 and 1972 stock was used; AVS has an expiry period of 5 years.

Conclusion:

Our study tends to indicate that we must re-appraise the use of AVS. It seems that the benefits of AVS in the majority of cases are not very clear; neither the patients' stay in hospital nor the clotting time being very favourably affected in either case. On the other hand, toxicity of the AVS can be severe, and its use must be tempered with care. It seems, therefore, that AVS should perhaps be reserved for patients with shock or those who are bleeding profusely from the gums or other sites. In all other cases re-assurance and symptomatic measures suffice, even though the clotting time is prolonged and there is a severe local reaction.

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References:

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