

TREATMENT OF SNAKEBITES IN A REMOTE RURAL HOSPITAL IN EAST AFRICA

(as a combination of appropriate western medicine and a traditional herbalist's medicine.)

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SUMMARY

Within 3 years, 30 cases of snakebite injuries were treated with a combination of modern medicine and the methods of a traditional medicine after an old familial knowledge. Antivenoms were not used.

The trial to combine the method of the herbalistic traditional therapy, described in detail, with a modern therapeutic scheme seems to be very promising.

According to REID the natural mortality rate in bites by elapidae is 5 % and in bites by viperidae is 1 %.

The very costly use of antivenoms in remote tropical hospitals and dispensaries which have to take care for the basic medical treatment of the rural population is of very limited necessity. The botanical determination and the chemical analysis of the plants, their roots and leaves are under way and will be subject of a further study.

INTRODUCTION

The traditional healer/herbalist plays

a very important role within the health-system of Tanzania; he is considerably supported by the ministry of Tanzania which tries to include these herbalist, traditional healers in to the big frame of national health planning and to this end it has established the Traditional Medicine Research Unit at the Muhimbili Medical Centre in Dar es Salaam.

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The Voluntary Agency Hospital MNERO lies in the Southeast of Tanzania, a

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relatively sparsely populated savannah area, where the infrastructure of traditional medicine is still intact. Almost every village has its own herbalists who, in most cases, are specialized in various medical fields.

In this essay it will be shown, how in this hospital-it was tried to combine and to supplement the possibilities of modern therapy of snake bites with traditional medicine. So far no reports about a similar "combined" therapy of snake bite are known to us. In none of the treated patients an antivenom was used.

Poisonous Snakes in Tanzania

The snakes which are responsible for bite injuries in Tanzania are shown in table 1, according to D.G Broadley (1968). In this part of Africa both elapidae and viperidae are of importance.

Within a period of 3 years from October 1978 to September 1981-30 patients were admitted to Mnero Hospital after snakebite. There was strictly no outpatient treatment of a snakebite-injury.

Compared with all admitted patients of this period snake bite injuries counted for 0.5%. But we assume that the number of unknown cases is remarkably higher.

The bite injuries in this area occur mainly in the evening hours or during the night (lustrines!), with a high incidence in the rainy season. In most cases the snake escaped unrecognized. Only in 4 of the 30 cases identification was possible (3 times a spitting cobra, in one case a black mamba).

Symptoms of Snakebite Injuries

In table 2 the various groups of symptoms of the observed patients are summarized. The most frequent symptoms were local pains, swelling and necrosis either with or more often without subsequent deformation. In 3 cases the poison was injected into the eyes with the effect

of severe burning pains, but without permanent corneal damage.

2 cases developed beside the local symptoms-signs of general intoxication, especially of the CNS. One patient showed, within 2 hours after the bite, paresis of bulbar cranial nerves with difficulties in swallowing and breathing, and incoordination of speech. All of these symptoms subsided within 3 days. In the second case respiratory insufficiency made artificial respiration necessary. Both of these cases showed also tachycardia and hypotension. In one case local bleeding and mild hemoptysis were present. Signs of a beginning hypovolaemic shock which developed in its further course could be kept under control by substitution of intravenous fluid supply.

Combined Treatment of Snakebite Injuries

All patients were treated in the hospital by a herbalist and according to the modern snakebite-therapy. It must be noted that in no case any antivenom was used, because in this remote rural hospital they were not available.

The treatment program was performed in 2 different parts: the medicamentous therapy and a program following traditional herbalistic methods stemming from an old secret knowledge of the family of one of the authors (St. Pakomius).

Immediately after admission to the hospital the patients get Diazepam 10 mg i.m., Penicillin G 2 M.U. which has to be repeated twice a day for 5 days. In all cases passive tetanus immunization is also carried out. The injured extremity has to be put on a splint for rest. During the first 12 hours pulse rate and blood-pressure are recorded hourly. Infusions are only given in cases, when the clinical picture made it necessary.

In the meantime the herbalist is informed, starting the second part of the therapeutic program. In the following it will be briefly outlined how the plants, their roots and leaves, were used in a timely fixed course by the specialist.

First of all the root of the Milanzolombwe tree is ground and the resulting flour has to be mixed with water to a pastelike substance. This has to be swallowed by the patient. At the next program point small cuts by a razor blade are made into the skin around the site of the bite and as far as the swelling reaches. The rest of above paste is mixed together with a paste-prepared in the same way - of two compounds, the same way - of two compounds, the root of the Mlongatree (*Acacia* sp.) and the root of the Mpupitree (*Caesalpinia* sp.) This mixture is inoculated into the small skin-cuts. These inoculations are repeated once or twice daily for several days according to the severity of the local reaction. If there is severe local swelling the leaves of Mbarika (*Rhicinus communis* = castor oil plant) have to be added on the second and third day. These leaves have been briefly boiled and are applied still hot, onto the swollen area for about half an hour. These procedure has to be repeated until the swelling subsides.

Result of Combined Therapy of Snakebite Injuries

In 17 out of 23 cases with local symptoms but without severe necrosis the combined therapy was started within up to 3 hours after admission to the hospital. A reduction of the pains and subsiding of the swelling could be observed in all these cases, especially after application of castor oil plant leaves.

In 6 cases, with the start of the treatment after 3 hours, no obvious effect could be seen neither on the pains nor on the swelling. In 3 of 4 patients, who subsequently developed severe necrosis, there was a delay of the start of the therapy of up to 2 days after the bite.

All 3 patients after an attack of a spitting cobra with application of venom into the eyes were treated with plain water alone. They recovered without any sequels.

The 2 patients with the neurotoxic symptoms were admitted 2 and 4 hours respectively after the bite. The herbalistic therapy was started one and a half hours later in the former and 3 hours later in the latter patient. In both of them iv. drips were established. The patients received NG-tubes for feeding. In both cases Sodium bicarbonate was given in case 2 positive pressure respiration was necessary. The neurotoxic symptoms subsided completely within 48 - 60 hours.

In the one patient with local hemorrhage and signs of a systemic coagulation disturbance the bleeding stopped within an hour after the start of the herbalistic treatment. In this case the treatment was started already 2 hours after the bite injury had happened.

None of the 30 patients died, subsequent skin grafting was necessary in 2 patients and in one patient amputation of the foot had to be performed.

Table 1

POISONOUS SNAKES IN TANZANIA

ELAPIDAE

NAJA NIGROCOCLIS, SPITTING COBRA
DENDROASPIS POLYLEPIS, BLACK MAMBA
DENDROASPIS ANGUSTICEPS, GREEN MAMBA

VIPERIDAE

BITIS ARIETANS, PUFF ADDER
BITIS GABONICA, GABOON VIPER
GENUS CAUSUS, NIGHT ADDER

COLURIDAE

DISPHOLIDUS TYPUS, TREE SNAKE
THELOTORNIS KIRTLANDI, BIRD SNAKE

Table 2 **Symptoms of Snakebite Injuries**

n = 30

LOCAL SYMPTOMS: PAINS, SWELLING	
MILD, NOT DEFORMING NECROSIS	23
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SEVERE NECROSIS FOLLOWED BY AMPUTATION	4
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EYE SYMPTOMS AFTER APPLICATION OF THE VENOM INTO THE EYES	3
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HAEMOTOXIC SYMPTOMS:	
LOCAL HEMORRHAGE, HEMOPT	1
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NEUROTOXIC SYMPTOMS	
PARESIS OF BULBAR NERVES WITH RESPIRATORY INSUFFICIENCY	2

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