

Management of Snakebite and Research



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In this seminar, various aspects of research on Russell's viper bite, namely epidemiology, prophylaxis, first-aid, immunodiagnosis, clinical management, antivenom storage and research on Russell's viper venom, antivenom and toxoid were presented and discussed.

The efforts of the organising committee, participants, and WHO temporary advisers towards the successful conduct of the seminar and preparation of the proceedings are gratefully acknowledged.

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Part 1

Report of the Seminar

The seminar, convened at the Department of Medical Research (DMR) was attended by physicians from tertiary referral hospitals, divisional and township hospitals throughout the snakebite endemic areas of Myanmar, DMR staff, Dr. S Kumari (SEARO), Prof. RDC Theakston (Liverpool School of Tropical Medicine) and Prof. DA Warrell (University of Oxford) (WHO Temporary Advisors).

The aims of the seminar were to review current knowledge of the epidemiology, clinical features, diagnosis, treatment and prevention of snakebites in Myanmar.

Epidemiology

In Myanmar, snakebites may kill 1 000 people each year and are a major cause of acute renal failure. Some survivors are left with permanent physical handicap, chronic renal failure and chronic hypopituitarism. It is predominantly a disease of occupation – rice farmers and plantation workers are bitten on the feet and less commonly, on the hands. Seasonal variations in incidence are related to agricultural activity (peaks in the ploughing and harvesting seasons). Species responsible for frequent severe bites are Russell's viper, cobras and kraits. Rare severe bites are by King cobras and sea snakes. Frequent, usually mild, bites are by pit vipers (*Trimeresurus* and *Ovophis* species).

Clinical Features

Only about 50% of people bitten by snakes are envenomed. The “dry bites” result from mechanically ineffective or perhaps “defensive” bites.

Local envenoming (swelling, bruising, blistering, necrosis) is most severe in bites by vipers and cobras, and is minimal in krait bites.

Systemic envenoming includes shock, bleeding, incoagulable blood, acute renal failure (Russell's viper); paralysis (krait); paralysis with local envenoming (cobra); muscle breakdown and paralysis with renal failure (sea snake).

A unique effect of Russell's viper bite in Myanmar is haemorrhagic infarction of the anterior pituitary (Sheehan's like syndrome) resulting in acute or chronic pituitary failure.

Case fatality and clinical features of Russell's viper varies in different regions of Myanmar.

First Aid Treatment

Most traditional first aid methods (incisions, tattooing, tourniquets, black “snake stones”, electric shocks, suction, herbal remedies) are ineffective and even harmful. The most

effective methods are immobilization of the bitten limb and transport to hospital on a stretcher. For Russell's viper bites, pressure pad with immobilization has proved safe and capable of preventing systemic uptake of venom.

For neurotoxic elapid bites (Krait, Cobra, King cobra) pressure - immobilization using a long crepe bandage is recommended.

Hospital Treatment

Resuscitation, diagnosis of the biting species (by examining the dead snake or by inference from clinical signs and simple bed-side tests) are followed by the decision whether or not to give antivenom, ancillary treatment and rehabilitation.

Myanmar Pharmaceutical Factory formerly produced a freeze dried mono-specific antivenom which neutralized 2 mg of Russell's viper venom per ml. Recently, a lower titre liquid antivenom has been issued, neutralizing 0.6 mg per ml venom.

Clinical trials have not yet been carried out to determine the initial dose of new antivenom. The old MPI antivenom was effective at an initial dose of 40 ml (80 ml for severe cases).

Indications for antivenom treatment are under review. In Myanmar, much antivenom is wasted by being given to nonvenomated patients.

The old MPI antivenom was commonly pyrogenic and there were some anaphylactic reactions. Reactogenicity of the new MPF antivenom is unknown. Treatment of acute renal failure in Russell's viper victims can save many lives. Peritoneal dialysis is available in Yangon, Mandalay, Magway and in a few township hospitals. Haemodialysis is an option only in tertiary referral centres such as Yangon General Hospital.

Assisted ventilation is needed in victims of neurotoxic envenoming. Basic skills of endotracheal intubation are essential in township doctors.

Diagnosis of Biting Snake

Hospital staff must be trained to recognize the medically- important species of snakes, in case the dead snake is brought with the patient.

预览已结束，完整报告链接

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