

Lethality and haemorrhagic activity assayed in eight W.H.O. standard venoms. E. TÁBORSKÁ, F. KORNALÍK and J. ŠIMÁK (Institute of Pathophysiology Charles University, Prague, C.S.S.R.).

LETHALITY was determined using the 'i.v. mice 48-hr' test; results were evaluated by the Spearman-Kärber procedure, as recommended by the WHO, and by a random method based on Roth's probit statistical evaluation. Both methods gave nearly identical results, which differed slightly from values obtained at the P. Ehrlich Institute. In four venoms lethality was assayed by the dose/survival time method of Meier and Theakston, which, however, revealed much higher values for LD₅₀.

Two methods for minimum haemorrhagic dose determination were compared: the WHO recommended method of 'mean diameter', and a method using ⁵¹Cr labelled red cells we described some years ago. Both results were evaluated by computer IQ 154 with the least squares method of dose-response relationship linearization. The linearity grade was always much higher in the method with labelled erythrocytes.

The results of the 'mean diameter' method (values obtained by linear interpolation of the dose-response relationship) correspond to the computer evaluation in only 50% of cases.

Contribution to the epidemiological and clinical aspects of snake bites in Hungary. Z. TAKÁCS,¹ M. JANISCH² and Z. KORSOS³ (¹Division of Toxinology, Hungarian Herpetological Society, P.O. Box 274, Szeged 6701, ²University of Veterinary Sciences, Department of Parasitology, P.O. Box 2, Budapest 1400, and ³Zoological Department, Hungarian Natural History Museum, 13 Baross, Budapest 1088, Hungary).

EPIDEMIOLOGICAL and clinical aspects of snake bites in Hungary were studied. From January 1970 to April 1986 49 bites occurred in 21 victims due to the native *Vipera berus* (12%), *V. ursinii* (25%) and to the foreign *Malpolon monspessulanus* (8%), *Vipera ammodytes* (53%) and *Bitis arietans* (2%). Ninety per cent of the victims were amateur or professional snake keepers. Fifty-nine per cent of the accidents occurred in private homes, 8% at universities, 23% with snake keepers in the field and 10% with laymen in the field. Ninety per cent of the bites occurred on the upper extremities, 8% on the lower extremities and 2% on the back. Out of the total *Malpolon* bites 75% showed no signs of poisoning and 25% showed only mild local symptoms. Among the *Vipera* envenomations local effects developed in 80% of the cases, whereas systemic effects occurred in 25%. Eighteen per cent of the *Vipera* bites showed no symptoms of poisoning. The only effects of the sole *Bitis* bite were local swelling and lymphadenitis. No deaths were recorded. No medical treatments were applied for the bites by *Malpolon* and *Bitis*. Fifty-two per cent of the victims of *Vipera* bites applied first-aid themselves and 45% were hospitalized. From all the patients due to viper envenomations 43% received Pasteur antivenin. Antivenom reactions occurred in 16% of all those treated with antivenin.

Independence of genesis of local and general tetanus. K. TAKANO and F. KIRCHNER (Abteilung Pathoneurophysiologie, Universität Göttingen, Göttingen, F.R.G.).

TETANUS toxin at doses of 1 - 10,000 mouse MLD/kg was injected into the triceps surae muscle of the cat. At the time when the signs of local tetanus appeared we could always see a partial or total depression of the monosynaptic reflex, (TAKANO *et al.*, 1983). Tetanus toxin at a dose of 100 mouse MLD/kg (corresponding to 0.05 cat MLD/kg) was injected into the gastrocnemius muscle of the cat. Ia-IPSPs could be observed up to 30 hr after toxin injection; thereafter they had disappeared. Ia-EPSPs were depressed 5 days after toxin injection (KANDA and TAKANO, 1983). Tetanus toxin at a dose of 2×10^5 LD₅₀ was injected i.v. into rabbits, eliciting symptoms of general tetanus. A rhythmic electrical activity was recorded from the cerebellum, as well as from the spinal alpha- and gamma-motoneurons. After spinal transection the rhythmic activity could be recorded only rostrally, but no longer distally to the transection (HUCK *et al.*, 1981). The postsynaptic, as well as the presynaptic, inhibition was still observed in these animals. From these results we suggest that the origin of general motor hyperactivity in tetanus lies not in the spinal cord but in the higher central nervous system, including supraspinal gamma motor activation, and that the general tetanus is not an integrated local tetanus.

REFERENCES

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Translation of poly (A⁺) mRNAs and expression of cDNAs encoding sea snake neurotoxins. T. TAMIYA, G. GUIGNERY-FRELAT, D. MARIAT, J.-C. BOULAIN and A. MENEZ (Service de Biochimie, Département de Biologie, Centre d'Etudes Nucléaires de Saclay, 91191 Gif-sur-Yvette Cédex, France).