

## ANAPHYLACTIC SHOCK FROM THE BITE OF VIPERA ASPIS HUGY

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*[Shock anafilattico da morso di vipera Aspis Hugyi]*

### SUMMARY

In this work the authors propose to bring a clinical case as a result of bites by *Vipera aspis hugyi* that came to their observation in a state of confusion and shock. After having highlighted the areas of Etna, where the snake lives and listed the mixture of toxic proteins and enzymes that can cause the severity of the poisoning, they linger on the prehospital and intra-hospital treatment of such case.

They conclude that, close monitoring and prompt treatment are the basis for a fully recovery.

**Key words:** Viperidi, spreading poison, serum antivenom, shock, resuscitation treatment

### RIASSUNTO

*In questo lavoro gli Autori si propongono di portare all'attenzione un caso clinico che in seguito a morso da *Vipera aspis hugyi* giungeva alla loro osservazione in stato confusionale e shock.*

*Dopo aver messo in evidenza le zone dell'Etna in cui vive il serpente ed aver elencato la miscela di proteine e gli enzimi tossici in grado di provocare la gravità dell'avvelenamento si soffermano sul trattamento preospedaliero ed intraospedaliero di tali casi.*

*Concludono affermando che un accurato monitoraggio ed un trattamento tempestivo sono alla base di una restitutio ad integrum.*

**Parole chiave:** Viperidi, diffusione del veleno, siero antivenom, shock, trattamento rianimatorio.

### Introduction

In Italy, despite the favorable trend in almost all cases of the bite of *Vipera* still arouses much concern. This is supported by the inability to make a realistic estimate of the number of patients poisoned by the viper venom, as the latter is coded according to ICD 9 (International Classification Diseases, 9th ed.), with the number 989.5, including all poisonings attributed to animals (snakes, scorpions, spiders, fish, etc.).

In Sicily there are the *Vipera aspis hugyi* and *Vipera aspis hugyi* (Schinz 1833), holotype from Etna. Given the peculiarities of this area, the purpose of this study was to define risks, criteria of severity, prognosis and treatment of serious poisoning.

The snake on mountain Etna is spreaded between 700 and 1000 m, especially in the north-

west and south-east side of Etna. It is found in specialized grown such as vineyards or orchards often near the stone walls that make up the fence, in the vegetation of broom lava rocks, in the woods or immediately before. The venom of viperidi is composed of a mixture of toxic proteins and enzymes (cholinesterase Fibrinogen-coagulase/Thrombin, Phosphatase, Hyaluronidase) capable of causing an action:

- neurotoxic: it can have both a cholinesterase reaction or a reaction similar to curare, with fasciculations, seizures, paresis, ptosis and diplopia;
- Hemorrhagic: inducing fibrinolysis, thrombocytopenia, hemolysis, up to a CID;
- Anaphylactic: with consequent onset of shock: especially in those patients who have been bitten previously or are allergic to Hymenoptera.

The severity of poisoning depends on the:



Therefore, it is evident the risk of anaphylactic shock by heterologous serum and therefore the need for close monitoring of vital functions that only a hospital can provide.

Since 1994 have been introduced on the market antivenum antibody fragments for three different European vipers (*V. Aspis*, and *Berus ammodytes*), known as Fab (fragment antigen binding), and therefore without the antigenic component characterized by a lower incidence of allergic reactions. The administration includes intravenous infusion of 2 ampoules in 200 cc of saline. Tolerance to treatment was good and clinical improvement is rapid after administration of 1-4 infusions.

### Case report

A man of 66 years, after a bite on his right hand by a snake identified as *Vipera aspis hugy*, with consequential state of confusion, came after 40 minutes to the emergency room in shock with 40 bpm and a pressure of 60/35mmHg. Inspection: the patient was dyspnoeic, in the right hand were evident two small holes spaced by 0.5-1 cm, and his face was oedematous. Lung auscultation were perceived widespread wheezing, prolonged exhalation, and a reduction in lung sounds.

Immediately, were made first resuscitation in order to restore the circulation: the oro-tracheal intubation, oxygen therapy, infusion of saline (8 l/48 h), 1 mg of epinephrine by continuous infusion diluted in 500 ml of saline infused at a rate of 0.5-2.0 ml / min, and methylprednisolone.

Laboratory tests, pointed out, the following abnormal values: hemoglobin 5.2 g/l, platelets 44 g/L, PT 61%, PTT 20 sec, fibrinogen 1.44 g/l, so that was needed a transfusion.

Were performed, skin tests and serum IgE antibodies specific to Hymenoptera venom, which resulted positive. After six days the patient was discharged with *restitutio ad integrum*.

### Conclusions

Poisoning from snake bite, thanks to the investigation of local reaction (edema, inflammation and pain) as well as, the relief of biting (two incisions point at a distance of 6-8 mm), requires a well-defined procedural framework, both in-hospital and prehospital field.

### References

- 1) Hsaini Y, Satte A, Balkhi H, Karouache A, Bourezza A., *Stroke following a viper bite*, *Ann Fr Anesth Reanim.* 2010 Apr; 29(4): 315-6. Epub 2010 Mar 16.
- 2) Jacques Petite, *Viper bites: treat or ignore?*, *Swiss Med Wkly* 2005; 135: 618-625.
- 3) Reimers AR, Weber M, Müller UR., *Are anaphylactic reactions to snake bites immunoglobulin E-mediated?*, *Clin Exp Allergy.* 2000 Feb; 30(2): 276-82.
- 4) *Siero antifidico: norme per un corretto utilizzo*, BIF Mag-Giu 2001 - N. 3, 114-115.
- 5) Turrisi G.F., *Nota preliminare su Anfibi e Rettili dell'area iblea (Sicilia sud-orientale)* (Amphibia, Reptilia), 1995.
- 6) Turrisi G.F., Vaccaro A., *Contributo alla conoscenza degli Anfibi e dei Rettili di Sicilia* (Amphibia, Reptilia), 1995.

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