

The Global Burden of a Neglected Disease

O Impacto Mundial de uma Doença Negligenciada

Christina Terra Gallafrio Novaes¹ 

Each year, approximately 1.2 to 5.5 million¹ cases of envenomation by venomous snakes occur worldwide, corresponding to a mean incidence of 69.4 per 100 000 inhabitants,¹ ranging from 130.7/100 000 in Asia to 0.7/100 000 in Europe.^{1,2} The estimated annual mortality reaches approximately 125 000 per year (a figure comparable to the number of deaths caused by drug-resistant tuberculosis), with a mean incidence of 0.33/100 000.^{1,3} Furthermore, permanent sequelae are observed in a number approximately three to four times greater than that of fatalities.¹⁻⁵

Most of this burden affects low-income and marginalized rural populations with limited or no access to healthcare, particularly in regions where antivenom is scarce or unavailable. Despite its significant impact, snakebite envenoming remains an underfunded field of research and is classified as a Category A neglected tropical disease by the World Health Organization.⁶

One possible reason contributing to this underfunding is the perception that snakebite envenoming is a problem distant from regions where financial resources are concentrated—being viewed primarily as an issue affecting South and Southeast Asia, Africa, and Central and South America. However, snakebites occur on every continent except Antarctica.^{2,3} Although infrequent in Europe, the epidemiology of such incidents may shift with climate change (either increasing, as snakebites are seasonal and more frequent during warmer months, or decreasing, if the destruction of natural habitats continues). Additionally, the growing popularity of keeping snakes as pets, including non-native venomous species, represents a potential source of new exposures.

Awareness and preparedness for such incidents are essential, as the management of snakebite envenoming requires prompt and appropriate intervention, which directly determines clinical outcomes.

This issue presents a case report of a patient bitten by a *Vipera latastei* snake in the Algarve region of Portugal. The availability of an antivenom with neutralizing activity against this species was pivotal in achieving a favorable outcome, despite the delay in seeking medical care, which led to complications.

Snake envenomation constitutes a medical emergency. Both the availability of species-specific antivenom and the

time elapsed between the bite and initiation of treatment are directly linked to the severity of complications. Delays in receiving appropriate care are associated with increased morbidity and mortality.

These observations underscore the global relevance of snakebite envenoming, emphasizing both the importance of awareness—that such accidents can occur anywhere in the world except Antarctica—and the urgent need for investment in research, the development of affordable and accessible treatments for heavily affected populations, and the implementation of preventive strategies for those at highest risk worldwide.

We wish you an insightful read. ■

Ethical Disclosures

Conflicts of Interest: The authors have no conflicts of interest to declare.

Financing Support: This work has not received any contribution, grant or scholarship.

Confidentiality of Data: The authors declare that they have followed the protocols of their work center on the publication of patient data.

Patient Consent: Consent for publication was obtained.

Provenance and Peer Review: Not commissioned; externally peer-reviewed.

Responsabilidades Éticas

Conflitos de Interesse: Os autores declaram a inexistência de conflitos de interesse na realização do presente trabalho.

Fontes de Financiamento: Não existiram fontes externas de financiamento para a realização deste artigo.

Confidencialidade dos Dados: Os autores declaram ter seguido os protocolos da sua instituição acerca da publicação dos dados de doentes.

Consentimento: Consentimento do doente para publicação obtido.

© Author(s) (or their employer(s)) and SPMI Case Reports 2025. Reuse permitted under CC BY-NC 4.0. No commercial re-use.

© Autor (es) (ou seu (s) empregador (es)) e SPMI Case Reports 2025. Reutilização permitida de acordo com CC BY-NC 4.0. Nenhuma reutilização comercial.

Corresponding Author/ Autor Correspondente:

Christina Terra Gallafrio Novaes - christina.novaes@gmail.com

Hospital Vital Brazil, Instituto Butantan

Av. Vital Brasil, 1500 - Butantã, São Paulo - SP, 05503-900, Brazil

¹Hospital Vital Brazil, Instituto Butantan, São Paulo, Brazil
<https://doi.org/10.60591/crspmi.506>

Received / Recebido: 2025/10/20

Accepted / Aceite: 2025/10/21

Published online / Publicado online: 2025/11/28

Published / Publicado: 2025/11/28

REFERENCES

1. Afroz A, Siddiquea BN, Chowdhury HA, Jackson TN, Watt AD. Snakebite Envenoming: A Systematic Review and Meta-Analysis of Global Morbidity and Mortality. *PLoS Negl Trop Dis*. 2024;18:e0012080. doi: 10.1371/journal.pntd.0012080.
2. Seifert SA, Armitage JO, Sanchez EE. Snake Envenomation. *New Engl J Med*. 2022;386:68-78. doi: 10.1056/NEJMr2105228.
3. Kasturiratne A, Wickremasinghe AR, de Silva N, Gunawardena NK, Pathmeswaran A, Premaratna R, et al. The global burden of snakebite: a literature analysis and modelling based on regional estimates of envenoming and deaths. *PLoS Med*. 2008;5:e218. doi: 10.1371/journal.pmed.0050218.
4. Warrell DA, Williams DJ. Clinical Aspects of snakebite envenoming and its treatment in low-resource settings. *Lancet*. 2023;401:1382-98. doi: 10.1016/S0140-6736(23)00002-8.
5. Gutiérrez JM, Calvete JJ, Habib AG, Harrison RA, Williams DJ, Warrell DA. Snakebite envenoming. *Nat Rev Dis Primers*. 2017;3:17079. doi: 10.1038/nrdp.2017.79. Erratum for: *Nat Rev Dis Primers*. 2017;3:17063. doi: 10.1038/nrdp.2017.63.
6. World Health Organization. Snakebite envenoming: a strategy for prevention and control. Geneva: WHO; 2019.