Plant compound found to have therapeutic effect on complications from snakebites

11 October 2018

"Jararaca (*Bothrops jararaca*). This photo was taken circa 2002 in Itatiaia, Rio de Janeiro, Brazil." Credit: Felipesussekind, Flickr, 2002, https://www.flickr.com/photos/felipesussekind/5992689190/

Rutin, a flavonoid, may complement antivenom as an effective co-treatment for envenoming from Bothrops jaraca.

Researchers have found that rutin, an inexpensive, plant-based compound may protect envenomed mice from bleeding and inflammation problems, according to a study published in *PLOS Neglected Tropical Diseases* by Ana Teresa Azevedo Sachetto of Institute Butantan, São Paulo, Brazil.

Anti-venom can effectively treat the major manifestations of snakebites, however, there are no known therapies effective for common secondary complications. Venom toxins from Bothrops jaraca (lance-headed vipers) may trigger bleeding, disrupt oxidation reduction in cells, and inhibit the body's ability to stop bleeding. Researchers injected both venom and rutin into a group of mice, then analyzed blood and tissue samples to understand what effect(s) if any, the rutin had on pathophysiological events triggered by Bothrops jararaca venom.

The mechanisms of clinical complications in patients bitten by B. jaraca snakes are not well understood and antivenom therapy is limited in its ability to treat the full array of complications that may occur following a snakebite. Future studies will be necessary to understand rutin activity once venom has initiated pathophysiological events, as well the therapeutic effects of rutin delivered with antivenom. According to the authors, the research "indicates that rutin has a great potential as an ancillary drug in concert with antivenom therapy to treat snakebites, particularly in countries where antivenom availability is scarce."

More information: Sachetto ATA, Rosa JG, Santoro ML (2018) Rutin (quercetin-3-rutinoside) modulates the hemostatic disturbances and redox imbalance induced by Bothrops jararacasnake venom in mice. *PLOS Neglected Tropical Diseases* 12(10): e0006774. doi.org/10.1371/journal.pntd.0006774

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