

Adrenaline given before snakebite anti-venom treatment reduces allergic reactions

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Giving low-dose adrenaline to patients who have been bitten by a poisonous snake before treatment with the appropriate antivenom is safe and reduces the risk of acute severe reactions to the treatment, but giving promethazine has no such effect and giving hydrocortisone may actually be harmful. These findings from a study led by Asita De Silva from the Clinical Trials Unit, Faculty of Medicine, University of Kelaniya in Ragama, Sri Lanka, are important because in some countries where snake bites are a major health problem, acute allergic reactions to poor quality antivenoms are common and often fatal.

In a study involving more than 1000 people who were admitted to five hospitals in Sri Lanka after experiencing a snakebite, the authors randomized patients to receive low-dose adrenaline, promethazine, hydrocortisone or placebo — alone and in all possible combinations — immediately before treatment with an [antivenom](#) infusion. Compared with [placebo](#), pretreatment with adrenaline reduced severe reactions to the antivenom by 43% at one hour and by 38% over 48 hours. By contrast, neither hydrocortisone nor [promethazine](#) given alone reduced the rate of adverse reactions to the antivenom and adding hydrocortisone appeared to negate the beneficial effect of adrenaline. These findings also emphasize the high rate of acute adverse reactions to antivenom and stress the importance of improving the quality of the available antivenoms in Sri Lanka and South Asia.

The authors say: "The need for concerted action by local health and regulatory authorities, the World Health Organization, and other

stakeholders, including technology transfer programmes between antivenom manufacturers, to improve the quality of antivenom can not be overemphasized."

They continue: "Until these overdue improvements come about, we have shown that pretreatment with low-dose adrenaline is an effective and safe therapy to prevent acute reactions to antivenom... Meanwhile, we continue to reiterate that the need for careful observation of patients receiving antivenom and prompt treatment of acute reactions when they occur remains undiminished."

More information: de Silva HA, Pathmeswaran A, Ranasinha CD, Jayamanne S, Samarakoon SB, et al. (2011) Low-Dose Adrenaline, Promethazine, and Hydrocortisone in the Prevention of Acute Adverse Reactions to Antivenom following Snakebite: A Randomised, Double-Blind, Placebo-Controlled Trial. PLoS Med 8(5): e1000435.
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