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Snake Venom is Neutralised by Consuming Cashew Nut Tree Bark: Veracity or Fallacy

Nnodim Promise Amarachi, Nnodim Johnkennedy*, Edward Ukamaka and Nwanguma Eberechi

Department of Medical Laboratory Science, Faculty of Health Science, Imo State University, Nigeria

***Corresponding author:** Nnodim Johnkennedy, Department of Medical Laboratory Science, Faculty of Health Science, Imo State University, Owerri, Nigeria

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ABSTRACT

Snake venom is a highly toxic saliva, which help to immobilise and consume prey. Although certain species of snake can also spit venom, most snake species inject poison during a bite with their distinctive fangs. The glands responsible for secreting zootoxins are a variation of the parotid salivary glands seen in other vertebrates. Typically, they are situated on both sides of the head, beneath and behind the eyes, and are covered in a muscular sheath. Large glands known as alveoli contain the venom before a conduit carries it to the base of tubular or channelled fangs, where it is expelled. It has been exploded in social media that chewing of bark of cashew tree is antivenomous. However, this article tends to throw more light on its veracity or fallacy

Keywords: Snake Venom; Cashew Tree Bark; Veracity; Fallacy

Introduction

A recent social media post asserted that chewing the bark of a cashew nut tree will neutralise the poison of a snake bite and guarantee the victim's complete recovery. According to a Facebook post with the headline "ANTI-POISON," snake venom can be successfully warded off by chewing cashew nut tree bark. Moreover, the article asserts that the bark is effective and beneficial even in the event of an anaconda bite [1]. Cashew nut trees are widely distributed and frequently border the streets around settlements in several tropical African nations. If this is the case, it would be a perfect first aid for snakebite. Sadly, there is little proof that it is effective, and raw cashew nuts and their bark contain urushiol, a toxin that has been linked to allergic reactions in people [2]. According to estimates from the World Health Organisation, between 20,000 and 32,000 people in sub-Saharan Africa die from snakebite each year. This is probably an underestimate based on the data that is currently available. Not all snakebite victims receive medical care in hospitals; this is particularly true in developing nations and rural locations. Many receive treatment from traditional healers and pass away before ever getting to a hospital. Not all of these deaths are recorded or made public [3]. An estimated 300 people in Mozambique die from snakebite each year. In the northern Mozambican province of Cabo Delgado, a recent article that involved slightly over a thousand household surveys projected that there are over 6000 bites annually and about 800 deaths in that area alone.

Based solely on Mozambique, they extrapolated this data and conservatively estimated that there are over 69,000 bites and nearly 9,000 deaths year [2]. Approximately 68% of Mozambique's population lives in rural areas and is dependent on subsistence farming. These folks frequently come into contact with snakes, and many of them get bitten. Regretfully, conventional methods of treatment are used for about 60% of bites. Merely 15% of patients visit hospitals for medical care. About 25% pass away before getting to a hospital [4]. It has been reported that snakebite is the main source of sickness and death for farmers and hunters in the northern Nigerian region of the Benue Valley. Snakebite morbidity frequently results in limb loss and has a detrimental impact on a farmer's capacity to support his family [5]. Even without the use of antivenom, treating a snakebite in a hospital

is quite manageable. For the majority of bites (cytotoxic, such those from puff adders and mozambique spitting cobras), careful fluid management is necessary to prevent organ failure and manage swelling and tissue damage. In cases of neurotoxic bites (e.g., Black Mambas), breathing needs to be carefully controlled. According to a report from the rural KwaZulu-Natal Ngwelezane Hospital, there were 879 snake bites over a five-year period, but no fatalities. In hospitals, snakebite is curable and can be treated with antivenom [6]. It is traditionally recommended that the cashew tree's bark could play a first aid role in snake bite.

However, it is not an antivenom. The only known way to stop a deadly snakebite is to use antivenom. The University of Mysore in India's biochemistry department carried out the 2009 study. Mice in the study received a lab-made extract of cashew tree bark and were injected with a viper snake's venom. According to the study, the extract stopped the snake bite site's bleeding, edoema, and muscle damage. The mice that had the extract took longer to die, but the venom was still deadly [7]. The extract was deemed a "beneficial first-aid treatment in viper bites" by the researchers. Nonetheless, using antivenom when necessary and promptly is the only recognised treatment that can stop a deadly snakebite from killing someone or leaving them disabled. Numerous researches on snakebite envenomation corroborated this [8]. The illness known as snakebite envenoming is brought on by the toxins in a deadly snake's bite. A therapy called antivenom works to offset the consequences of poisoning. Snakebite envenoming is a medical emergency. In order to acquire antivenom, the snakebite victims are encouraged to seek medical assistance as soon as possible as the only specific therapies for snakebites are antivenom. The World Health Organisation advises against utilising traditional herbal remedies for snakebites in its guidelines. They may do more harm than good if they postpone receiving medical care [5]. Grown for its fruits, the cashew tree is a tropical evergreen. Anacardium occidentale is the cashew tree's scientific name.

The rough-textured, greyish-brown bark of the cashew tree bears a thick covering of tannins that are utilised in traditional medicine for a variety of purposes [8]. Numerous substances found in the bark, such as cardol and anacardic acid, have been demonstrated to have antifungal, antibacterial, and anti-inflammatory qualities. Antivenom is made by injecting a tiny quantity of venom into an animal, like a horse or sheep, and then collecting the antibodies the animal's immune system developed in reaction to the venom. Antivenom is a drug used to treat the consequences of a poisonous snake bite. After that, these antibodies are refined to be used as an antivenom for snake bites [6]. Anti-venoms are unique to the kind of venom in question, and attempting to treat an injury with an unproven remedy or treatment could be hazardous and even fatal [8]. In another research, it was reported that an extract from the bark of cashew trees stopped the snake bite site's bleeding, swelling, and muscle damage. The mice that had the extract took longer to die, but the venom was still deadly. The extract was shown to be a "beneficial first-aid treatment in viper bites," according to the researchers [9]. The World Health Organisation (WHO) states that "most traditional methods are useless and harmful" when it comes to treating snake bites. The WHO advises against using traditional herbal remedies. Furthermore, it has been argued that although cashew bark contains several chemical components that have been researched for possible medical uses, cashew bark has never been used as an anti-venom.

It has been noted that the cashew extract does not save lives; at best, it delays the action of the snake venom [6]. However, researchers have also shown that the bark extract of Anacardium occidentale has anti-ophidian qualities. Anacardium occidentale bark extract has been shown in a study to be able to counteract both the pharmacological and enzymatic effects that Vipera russelii venom causes [5]. The study found that the extract, in a dose-dependent manner, neutralised the hydrolytic enzymes found in viper venom, including phospholipase, protease, and hyaluronidase. These enzymes cause the systemic effects of envenomation, such as organ failure and changes to the coagulation components, as well as the local effects, such as inflammation, myonecrosis, and local tissue destruction [10]. Hence it has been advocated that the extract counteracted the venom's pharmacological effects, which included edoema, bleeding, and myotoxic consequences that included mortality. It can be utilised as an alternative to serum therapy since it inhibits both hydrolytic enzymes and pharmacological effects. It can also be a rich source of prospective hydrolytic enzyme inhibitors that might be used to treat a variety of physio-pathological illnesses [9].

Conclusion

Although cashew bark might have some therapeutic uses, it is useless as an antivenom. Neither regulatory body has approved cashew bark as a treatment for snake bites, although, may scientifically serve as a first aid to counteract the effects of snake venom.

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