

Short Communication

Popular names for bushmaster (*Lachesis muta*) and lancehead (*Bothrops atrox*) snakes in the Alto Juruá region: repercussions for clinical-epidemiological diagnosis and surveillance

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Abstract

Introduction: The popular names “*surucucu*” and “*jararaca*” have been used in literature for *Lachesis muta* and *Bothrops atrox* snakes, respectively. We present the popular names reported by patients who suffered snakebites in the Alto Juruá region. **Methods:** Fifty-seven (76%) patients saw the snakes that caused the envenomations and were asked about their popular names and sizes. **Results:** The snakes *Bothrops atrox*, referred to as “*jararaca*,” were recognized as being mainly juveniles (80.7%) and “*surucucu*” as mainly adults (81.8%). **Conclusions:** The name “*surucucu*” is used in the Alto Juruá region for the snake *B. atrox*, mainly for adult specimens.

Keywords: Snakebites. Ophidism. Venomous snakes. Amazonia. State of Acre.

The bushmaster (*Lachesis muta*) is the largest venomous snake in South America, at over three meters in length. Its geographical distribution in Brazil is in the Amazon and in the Atlantic Forest from the northeastern region down to the state of Rio de Janeiro¹. The name “*muta*,” originating from Latin, means “mute,” referring to the fact that this species resembles the rattlesnake (*Crotalus durissus*), but without having a rattle at the tip of the tail¹. The popular name “*surucucu*” has been referred to in the literature by several authors for the snake *Lachesis muta*^{1,2}. It occurs in low population densities in forested areas¹⁻³ and in regional epidemiological studies, it is usually responsible for 0.3% to 4.3% of snakebites^{4,5}.

The rarity of this species is also reflected in the few existing reports of envenomations with this snake in the wild⁶. The conical protrusions of its scales, reminiscent of the bark of the jackfruit tree, gave rise to other popular names (*pico-de-jaca* and *surucucu-pico-de-jaca*) by which this snake is known in Amazonia and Bahia^{1,2}.

The lancehead (*Bothrops atrox*) is the main cause of envenomations in the Amazon in several studies^{1,4,5} and is the most abundant venomous snake in forest areas and also in areas occupied by humans (pastures, crops, and even urban areas)¹⁻³. This snake is known as “*jararaca*,” “*surucucu-do-barranco*,” and “*boca-podre*” in Acre⁷ and also by other names (e.g., *comboia*, *japoboia* e *surucucurana*) depending on the Amazonian region. In Cruzeiro do Sul, Acre, Bernarde and Gomes⁸, from the SINAN records, observed that 51.3% of the envenomations were reported as *Lachesis*. These authors assumed that this high incidence was an overestimation due to the regional name for the snake *Bothrops atrox* being “*surucucu*” and health professionals mistakenly assigning these envenomations to *Lachesis muta*.

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We present here the popular names reported by patients who suffered *Bothrops* envenomations in Alto Juruá and were treated at the Juruá Regional Hospital in Cruzeiro do Sul (AC) and discuss the use of the popular names “*jararaca*” and “*surucucu*.”

The study was conducted during an eight month period (July 1, 2017 to February 28, 2018) at the Regional Hospital of Juruá in the Municipality of Cruzeiro do Sul (Acre), which has approximately 82,000 inhabitants⁹ and is located in the Northwest of Brazil. The hospital receives patients suffering from snakebites in this municipality and from others in the Alto Juruá region (Mâncio Lima, Marechal Thaumaturgo, Porto Walter, and Rodrigues Alves, and also from Guajará, in the Amazonas state).

The snakes that caused the envenomations were identified from clinical and epidemiological diagnosis of the symptoms and signs that patients presented during hospital admission (probable cases) according to the types of envenomations (*Bothrops*, *Lachesis* and *Micrurus*) that may occur in the region⁸, and from laboratory tests when performed or when the snake responsible for the envenomation was taken to the hospital or photographed (confirmed cases). The cases in which the snakes were not taken to the hospital, that were asymptomatic, and had no change in blood coagulation time were considered “dry bites” or caused by colubrids and dipsadids¹⁰. The snakes, when taken to the hospital, were identified using the regional snake identification guide⁷ and their sizes were obtained with the aid of a tape measure.

The patients, and any other witnesses to the event, were interviewed and asked about the type of snake which had bitten the patient, and with the use of a tape measure, the size of the snake was estimated by the patient or witnesses. A board containing photographs of snakes was shown to the patient to assess whether they recognized the specimen responsible for the envenomation. The board contained color photographs of 17 common species in the Alto Juruá region⁷ in the order as follows: *Boa constrictor*, *Eunectes murinus*, *Bothrops bilineatus*, *Spilotes pullatus*, *Lachesis muta*, *B. atrox* (adult), *Corallus batesii*, *Micrurus lemniscatus*, *Oxyrhopus melanogenys*, *M. hemprichii*, *M. remotus*, *B. atrox* (juvenile), *Epicrates cenchria*, *Anilius scytale*, *Oxybelis fulgidus*, *M. surinamensis*, *Erythrolamprus aesculapii*, and *E. reginae*, which were only indicated by letters from A to R. Each of the species of the snake had two photographs, with the exception of *B. atrox* that featured two pictures of juvenile specimens and two of adult specimens. To verify if there is a tendency for *B. atrox*, recognized from the board of photographs as the juveniles, to be referred to as “*jararaca*,” and those called “*surucucu*” to be the adults, a chi-square test was applied, considering $P < 0.05$ as significant.

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During the study period, 90 patients with snakebites were treated, 75 of which were caused by *Bothrops atrox* (67 probable cases and 8 confirmed cases) (Figure 1) and 15 by other snakes



FIGURE 1: a) Juvenile lancehead (*Bothrops atrox*) mainly known as “*jararaca*.” b) Adult lancehead (*Bothrops atrox*) mainly known as “*surucucu*.” c) Bushmaster (*Lachesis muta*) mainly known as “*pico-de-jaca*.” Photographs by Paulo Bernarde.

(probably other snakes or dry bites). No envenomations caused by *Lachesis muta* (Figure 1) were recorded.

Of the 75 probable cases of *Bothrops atrox* envenomations, 57 patients (76%) saw the snake that caused the bite and were asked about the snake’s popular name and size (Table 1). Fifteen adult patients did not see the snake and three children, who were unaccompanied at the time of the event, could not recognize the snake or answer the questions. Of the 57 people who saw the snake, 53 (93%) recognized the species *B. atrox* in the photographs. Four patients claimed that they did not know the snakes’ name, but the snake was identified at the time of

TABLE 1: Popular names attributed to *Bothrops atrox* specimens causing snakebites in Alto Juruá, their sizes (total length) (n = 57), and the recognition of photographs of juvenile and adult specimens by the patients (n = 53). J = juvenile picture recognition; A = adult picture recognition.

Popular name	N	Size variation	J	A
<i>Jararaca</i>	29 (50.8%)	20–115 cm (\bar{x} = 39.41 cm)	21	05
<i>Surucucu</i>	23 (40.3%)	49–150 cm (\bar{x} = 89 cm)	04	18
<i>Jararacuçu</i>	04 (7%)	30–77 cm (\bar{x} = 52.75 cm)	02	02
<i>Surucucu-do-barranco</i>	01 (1.7%)	150 cm	01	

the event by other people as a “*jararaca*.” Also, in the case of a death, the case was referred to in the medical record as by being caused by a “*jararaca*” either by the patient or by the companion at the event site.

The common names of the *Bothrops atrox* snake referred to by the patients or their companions were mainly “*jararaca*” (50.8% of interviewees) and “*surucucu*” (40.3%) and to a lesser extent “*jararacuçu*” (7%) and “*surucucu-do-barranco*” (1.7%) (Table 1). The snakes referred to as “*jararaca*” were recognized on the boards as mainly juveniles (80.7%) and those referred to as “*surucucu*” as being mainly adults (81.8%) (Chi Square = 20.14; P < 0.0001).

Our data confirm Bernarde and Gomes⁸ prediction that *Bothrops atrox* is the main cause of envenomations in the Alto Juruá region and that it is known by the population as “*jararaca*” (mainly juveniles) and “*surucucu*” (mainly adults), as well as “*jararacuçu*” and “*surucucu-do-barranco*.” The research conducted by Pierini et al.¹¹ in Alto Juruá to detect the presence of antibodies in the blood of 45 indigenous and riverine people who had suffered a snakebite at least once in their lives, showed that *B. atrox* was responsible for most of the envenomations (86%), and *L. muta* for 14%. Regarding the snakes responsible for envenomations (n = 250) in the study by Pierini et al.¹¹, “*surucucu*” was responsible for 30.5% and “*jararaca*” for 27.6%. Other popular names mentioned, probably for *B. atrox*, were “*surucucu-do-barranco*” (5.7%) and “*jararaca-açu*” (2.9%). The name “*surucucu-do-barranco*” was mentioned, probably because this snake is frequently found on the margins of aquatic environments¹⁻³. “*Pico de jaca*” was mentioned by 1% of the interviewees and also “*cascavel*” by 1%, the latter being a popular name also attributed to *L. muta* in Alto Juruá⁸ and also in some other countries (“*cascabel*” in Bolivia and “*cascabelle*” in Trinidad)¹.

Health professionals should consider the clinical and epidemiological evidence as the primary criteria during the evaluation of a patient who has been bitten by a snake to make the diagnosis and decide the best treatment. In addition to this problem related to the use of popular names⁸, there is also a similarity in the symptoms of *Bothrops* and *Lachesis* envenomation¹². We emphasize the need for the production and distribution of anti-*Bothrops/Lachesis* antivenom that is capable of reversing the clinical situation of patients suffering from *Bothrops* and *Lachesis* envenomation, as the popular names of these two snakes and the similar symptoms of the

envenomations may contribute to misdiagnosis. In addition, there is the inefficacy of anti-*Bothrops* antivenom in reversing the coagulant activity of *Lachesis* envenomation¹³, which could compromise treatment in cases of misdiagnosis.

We suggest that in the creation of inventories of fauna and ethno-herpetology, as well as of snakebites, researchers pay attention to the popular names reported by the people of a region, as the same species may have different names in the same place or according to the snake’s age and also along its geographical distribution. Another recommendation is that in booklets, posters, books, and articles on snakebites, the authors use the name “*surucucu-pico-de-jaca*” for *Lachesis muta* instead of “*surucucu*”. Furthermore, when referring to *Bothrops atrox*, besides “*jararaca*”, write that the name “*surucucu*” is also used in some regions in the Amazon as the popular name for this snake¹⁴. In this way, it is easier for health professionals to associate the species of snake that the patient is referring to as responsible for the bite with the respective type of envenomation.

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Conflict of Interest: The authors declare that there is no conflict of interest.

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