

## **Retrospective analysis of post-exposure to human anti-rabies treatment in Botucatu, São Paulo State, Brazil**

**Ayres JA (1), Paiva BSR (1), Barraviera B (2)**

(1) Department of Nursing, Botucatu Medical School, São Paulo State University, UNESP, Botucatu, São Paulo State, Brazil; (2) Department of Tropical Diseases and Imaging Diagnosis, Botucatu Medical School, São Paulo State University, UNESP, Botucatu, São Paulo State, Brazil.

**ABSTRACT:** This analysis aimed to identify characteristics of accidents that would, probably, provoke rabies infection. A total of 14,409 survey questionnaires for surveillance of human rabies from the Brazilian Information System for Disease Notification (SINAN), from 2000 to 2005, were analyzed. Regarding demographics, it was observed that 7,377 (51.5%) of the victims were white, 4,458 (30.93%) were children and 8,008 (55.58%) were males. Urban cases were prevalent (88.10%) while dogs were the animals most frequently involved in accidents, in 11,700 cases (81.19%). Bites (84.35%) and scratches (19.15%) were the most prevalent exposure types, and occurred predominantly on victims' extremities (38.79%). The prophylactic measure taken in 6,179 cases comprised anti-rabies vaccine; of these victims, 421 (2.92%) showed systemic reactions while 693 (4.80%) reported no response. The importance of developing awareness in professionals that should correctly report post-exposure immunoprophylaxis cases is emphasized given the high number of individuals who receive this type of treatment annually.

**KEY WORDS:** rabies, post-exposure prophylaxis, anti-rabies serotherapy.

**CONFLICTS OF INTEREST:** There is no conflict.

### **CORRESPONDENCE TO:**

JAIRO APARECIDO AYRES, Departamento de Enfermagem, Faculdade de Medicina de Botucatu, UNESP, Distrito de Rubião Jr, s/n, Botucatu, SP, 18618-000, Brasil. Phone: +55 14 3811 6070. Email: [ayres@fmb.unesp.br](mailto:ayres@fmb.unesp.br).

## INTRODUCTION

Human rabies is lethal, and it is transmitted by bites, scratches and licking that result from man's proximity to household and wild animals. This type of disease requires expertise from health care professionals who provide treatment to accident victims, thus preventing improper treatment (1). Prevention is effected by means of specific immunobiologic agents, that is, vaccines that consist of pre-exposure treatment for professionals at constant risk for contracting the virus. However, subsequent to exposure, the vaccine is indicated for isolated use or in association with hyperimmune anti-rabies serum, which immediately neutralizes and protects against viral progression to the peripheral nervous system and, concomitantly, the vaccine stimulates the immune system to produce neutralizing antibodies (1, 2).

Therefore, the importance of strictly following post-exposure treatment protocols is emphasized, since such procedure will prevent not only predisposition to risks stemming from inadequate indication but also the unnecessary use of public resources that may compromise budgets or disfavor quality.

This analysis aimed at identifying the characteristics of accidents that may lead to rabies as well as the procedures used in their prevention. Data from 2000 to 2005 on surveillance of human rabies, from the Brazilian Information System for Disease Notification (SINAN), were collected and presented in descriptive form.

In the 14,409 questionnaires analyzed, it was observed that some of the fields were not completed. With regard to sociodemographic aspects, it was observed that 7,377 (51.5%) victims were white, the predominant race in the country. There was a higher frequency of accidents affecting children, totaling 4,458 cases (30.93%). Another predominant aspect was the presence of 8,008 (55.58%) males. Urban cases also prevailed, comprising 88.10%. Data from other studies corroborate this analysis (3, 4).

Among the animals involved in the accidents, dogs prevailed in 11,700 (81.19%) cases; cats contributed with 1,460 (10.1%), bats with 63 (0.43%), monkeys with 14 (0.09%), foxes with 9 (0.09%) and other unidentified animal species with 1,163 (8.1%).

Although dogs and cats are thought to pose only moderate transmission risk, such transmissions have been observed (5). But the intensification in the annual immunization of these animals has led to a decrease in the number of human rabies cases in the controlled areas (6-8). Nevertheless, there has been an inversion in the

epidemiological characteristics of rabies, and the hematophagous bat (*Desmodus rotundus*) has been classified as the major transmitter in human rabies cases (9). Serovaccination is recommended after exposure to these animals either due to suspected or apparent lesions or to simple contact (1).

Among the exposure types, biting and scratching are noteworthy, with 12,155 (84.35%) and 2,760 (19.15%) cases, respectively. It was observed that 5,590 (38.79%) accidents involved the victim's extremities, of which 4,244 (29.45%) occurred on lower limbs (LL), 3,156 (21.90%) on upper limbs (UL) and 1,747 (12.12%) on the head/neck. Such accidents occurred less frequently on the trunk and mucosa, with 6.7% and 2.7% respectively. As regards the injury type, 7,080 (49.13%) were superficial, 6,819 (47.32) were deep and 897 (6.22%) were dilacerated. Studies involving these aspects have painted a similar picture (4, 6, 10).

It is worth noting that for injuries affecting the cephalic segment and extremities, it is necessary to institute post-exposure prophylaxis immediately, thus preventing the virus from reaching nerve endings (1).

Among the animals observed, treatment was interrupted in 302 (2.09%) cases and the abandonment rate was of 10% (1,443). The anti-rabies vaccine was indicated in 6,179 cases, and 421 (2.92%) showed systemic reactions. Serovaccination, which must be administered in health care services, was recommended in 693 (4.80%) of the cases (11).

Although the complete data enabled analysis of epidemiological aspects of accidents that potentially lead to rabies, they did not reflect the true picture due to completion failures, which can hinder disease control actions. Given the high number of individuals who receive this type of treatment annually, professionals in this area must improve awareness so as to correctly report post-exposure immunoprophylaxis cases.

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