

# RETROSPECTIVE STUDY OF DOG BITE CASES REPORTED TO ECWA VETERINARY CLINIC, BUKURU, PLATEAU STATE, NIGERIA.

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## ABSTRACT

A retrospective study of dog bite cases reported to ECWA Veterinary Clinic Bukuru was carried out in Plateau State, Nigeria to understand the pattern of occurrence in this region. A total of two hundred and forty seven (247) dog bite cases were reported between May, 2009 and June, 2010. The dogs profile showed that 82.1% of the dogs involved had no history of anti-rabies vaccination, 12.6% had records of expired vaccination and only 5.3% had current vaccination. Based on clinical signs, 6.5% of the offending dogs were suspected to be rabid with 2.4% confirmed rabies positive based on laboratory analysis carried out in National Veterinary Research Institute Vom. About 92.7% of the dogs were owned. Of the 50 (247) victims 33 (66%) are less than 20 years old.

**Key words:** Dog bite, Retrospective, Rabid, Profile, Vaccination

## INTRODUCTION

Rabies is acute viral encephalitis characterized by aggressiveness, progressive paralysis and death in all warm blooded animals. The disease is world wide in distribution except for Island nations like the Antarctica (Rupprecht et al., 1995). It is caused by the rabies virus (genotype 1) belonging to the genus Lyssavirus and family Rhabdoviridae. Transmission to other animals and humans occur through close contact with infective saliva following bites of infected animals, scratches, or even licking of broken skin and mucous membranes. Carnivores are the reservoirs and major vectors of transmission especially in Asia and Africa where the disease is endemic. In the Americas however, bats are important in transmitting the disease (WHO, 2005).

Urban rabies occurs mostly in less developed countries where the dog is the principal host and vector giving rise to a greater opportunity for spill – over of infection into human populations. This accounts for an estimated 99% of all recorded human cases and 92% of all human post – exposure treatments (Pastoret et al., 1995).

The domestic dog (*Canis familiaris*) is known as mans' best friend because of the close relationship between the two. Recent estimate revealed that over 52 million dogs cohabit with humans in the United States (Karla & Abiodun, 2008). In Africa, the increasing human population is met with attendant increase in dog population which has great implications for the transmission of rabies (Gascogne, 1994).

Dog bite poses a major public health threat both in developed and developing nations. In addition to the severe physical trauma and potentially permanent disfiguring wounds sustained by dog attack, dog bite victims are often burned with emotional and psychological trauma (Chornel & Trotignons, 1992). Bites expose victims to many potential zoonoses, particularly rabies (Peters et al., 2004), which is feared because of the extremely high fatality rate of almost 100%.

Plateau State in Nigeria has a large population of dogs due to the cultural acceptance as meat as well as good weather condition for keeping of exotic breeds. The largest dog market in West Africa is located in Kanke Local Government Area of the State. Over the years, cases of dog bites are on the increase which necessitated the desire to evaluate the status of the problem reported to this clinic in the recent past.

## MATERIALS AND METHODS

**Study area:** The study was conducted in Jos Plateau State, Nigeria. It is located at Latitude: 10° 0' 0 N, Longitude: 9° 30' 0 E on the Jos Plateau (Wikipedia, 2011). The city is divided into three separate Local Government Areas: Jos-North, Jos-South, and Jos-East with a combined population density of 391 persons per Km<sup>2</sup>. The city has an altitude of 1, 217 m above sea level and so enjoys a more temperate climate than most of the rest of Nigeria (Wikipedia, 2011).

ECWA Veterinary clinic is located in Bukuru in Jos South Local Government Area. Bukuru lies 8 miles (13Km) south-west from the city of Jos. The Clinic is the third largest in the state after the State Veterinary Clinic and National Veterinary Research Institute Clinic Vom. It provides Veterinary services to people both within and outside Plateau State. The Clinic records an average of 200 cases per week. Victims of dog bites are also reported to the clinic for professional advice and appropriate handling of the offending dog.

**The records:** Primary clinical records of dog bite cases between May 2009 and June 2010 were accessed and analysed retrospectively. Reports of confirmed rabies cases were obtained from laboratory diagnosis conducted at the National Veterinary Research Institute, Vom.

## RESULTS

Table 1 gives the vaccination status of the dogs involved. The result showed that 82.1% of the dogs have never been vaccinated for rabies. Among those vaccinated, 12.6% had their vaccination status expired more than 1 year ago while only 5.3% had current vaccination. Of all the cases, 92.7% of the dogs had identified owners (Table 2). Those confirmed to be rabid based on laboratory testing were 2.4% while 6.5% were suspected rabid based on clinical signs (Table 3). Analysis of the ages of dog-bite victims showed that 50 (247) of the victims 33 (66%) are less than 20 years old (Table 4).

**TABLE 1. THE PROFILE OF DOGS INVOLVED IN BITES ACCORDING TO VACCINATION HISTORY.**

VACCINATION HISTORY	No DOGS	PERCENTAGE (%)
Current Vaccination	13	5.3
Expired Vaccination	31	12.6
No Vaccination	203	82.1
Total	247	100

**TABLE 2. THE PROFILE OF DOGS INVOLVED IN DOG BITES ACCORDING TO OWNERSHIP.**

OWNERSHIP	No DOGS	PERCENTAGE (%)
Owned	223	90.3
Unknown	24	9.7
Total	247	100

**TABLE 3. RABIES STATUS OF THE DOGS INVOLVED IN DOG BITES REPORTED TO ECWA VETERINARY CLINIC BETWEEN MAY 2009 AND JUNE 2010.**

RABIES STATUS	NUMBER OF DOGS	PERCENTAGE (%)
Suspected	16	6.5
Confirmed	6	2.4
<b>Total</b>	<b>22</b>	<b>8.9</b>

**TABLE 4. AGE DISTRIBUTION OF DOG-BITE VICTIMS REPORTED TO ECWA VET CLINIC BUKURU BETWEEN MAY 2009 AND JUNE 2010**

AGE	NUMBER OF VICTIMS	PERCENTAGE (%)
1-20	33	66
>20	17	34
<b>Total</b>	<b>50</b>	<b>100</b>

## DISCUSSION

A report of 247 cases of dog bite in one Veterinary Clinic in a year calls for concern. This figure is alarming compared to 900 cases reported in 2 hospitals in 10 years in Sokoto (Ahmed et al., 2000) but far lower than what Aghahowa & Ogbevoen (2010) reported in Benin. Perhaps, this should not come as surprise because the largest commercial dog market in West Africa is located in Kanke Local Government of Plateau State (the present area where this study was conducted). Results from this study revealed very low vaccination status of the dogs, similar to the observation of Abubakar & Bakari (2012). Even those that had previously vaccinated their dogs for rabies no longer pay attention to re-vaccination, a situation that will make achieving control of the disease impossible. The high percentage of the unvaccinated dogs (82.17%) involved in dog bite in one year observed in this study indicates that rabies may remain a significant threat to the population considering the low level of vaccination and high endemicity of the disease in the area. Recent report is beginning to give hope that people are becoming aware of the need to vaccinate their pets (Business day online, 2011).

Majority (92.7%) of the dogs involved in a bite could be traced to a particular owner by the bite victims. This agrees with findings of other authors (Overall & Love, 2001; Mendez et al., 2002) suggesting that more bites were reported by owned dogs which are not confined or restricted by their owners. Abubakar & Bakari (2012) observed that majority (51.9%) of the dog bites they studied were committed by stray dogs as most people do not restrain their dogs, allowing them to wander aimlessly posing danger to their neighbours and strangers. This makes it evident that poor dog ownership practices prevail since most of the offending dogs are owned but were free roaming. Cases of dogs biting their owners were not recorded in the present study, contrary to report of Abubakar & Bakari (2012) who observed 14.8% cases of victims bitten by their own dogs.

This study showed that 2.4% were confirmed and 6.5% suspected rabid dogs involved in bites, suggesting that rabies is endemic in the dog population of Jos.

In this study most of the victims of dog bites are children less than 20 years of age, most of them (66%) bitten by their neighbor's dogs. Report by Karia & Abiodun (2008) that identified children of age 18 years as the most frequent victims of dog bites was similar to ours but differ from that of Abubakar & Bakari (2012) who observed such threat (55%) in much younger children less than 10 years. Several other reports have found children of different age

group to be more vulnerable to dog bite than adults. Reasons given for this include the following: children are more likely to have dogs provoked and are also less likely to defend themselves against attack thereby sustaining multiple injuries.

It is concluded that there is low level of vaccination for rabies among the dog population in Jos and children are the most common victims of dog bite. The results further suggest that rabies is endemic in Jos, prompting the need for a massive rabies vaccination campaign in the area. Good dog ownership including confinement of dogs should be enforced on dog owners by relevant authority to minimize dog bite incidences.

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