RETROSPECTIVE STUDY OF DOG BITE CASES REPORTED TO ZONAL VETERINARY CLINIC, UMUAHIA, ABIA STATE, NIGERIA

Mshelbwala PP*, Maikai VB, Angani MT, Nlebedum UC, Nwokocha QN, Garba A and Ogunkoya AB

1Department of Veterinary Medicine, Ahmadu Bello University, Zaria
2Department of Veterinary Public Health and Preventive Medicine, Ahmadu Bello University, Zaria
3Department of Veterinary Anatomy, Michael Okpara University of Agriculture, Umudike
4Zonal Veterinary Clinic, Umuahia, Abia State.
5Department of Diagnostics and Extension, National Veterinary Research Institute, Vom - Nigeria.

Received: July 08, 2013; Revision: August 18, 2013; Accepted: September 19, 2013
Available Online: September 20, 2013

ABSTRACT

A ten year retrospective study of dog bite cases reported to Zonal Veterinary Clinic, Umuahia, Abia State, Nigeria was undertaken, to understand the pattern of occurrence of dog bite in relation to rabies cases in the region. A total of one hundred and ten (110) cases of dog bites were reported during a period of ten years, between January 2004 and June 2013. Out of these 110 dog bite cases, ninety (81.8%) persons were bitten by owned dogs, while (18.2%) were bitten by stray dogs. Among these 110 cases 50 (45.4%) dogs had no anti-rabies vaccination history, 43 (39.1%) had unknown vaccination status, 7 (6.4%) had their vaccination expired and only 10 (9.1%) had current vaccination history. From the clinical signs shown, 6% of the dogs were suspected to be rabid although no confirmatory diagnosis was made. About 71.8% of the victims were adults while 28.2% were children. 5.6% were male and 46.4% female. While dog bite cases were seen more in children in many studies, in this present study more cases were seen in adults. Survey of rabies in dogs and other animals is highly recommended in this study area.

* Corresponding author
E-mail: philbwala@yahoo.com (Mshelbwala PP)

Peer review under responsibility of Journal of Experimental Biology and Agricultural Sciences.
1 Introduction

Rabies is a viral disease of all mammals, it is transmitted by the bite or scratch from a rabid animal (WHO, 2011). Rabies virus (RABV) infects the central nervous system, causing encephalopathy and ultimately death (Baer et al., 1996; Timoney et al., 1988). The virus is a single stranded RNA virus belonging to the genus *Lyssavirus* of the family Rhabdoviridae (Timoney et al., 1988). Rabies infection has a case fatality rate of almost 100 %, it accounts for over 55,000 human deaths annually, with most cases in Asia and Africa (WHO, 2011). The case of rabies in humans and dogs in Nigeria was first time documented in 1912 and 1925, respectively (Bogler & Hardy, 1960). Many authors have continued to report cases of rabies (Oboegbulem, 1994; Ogunkoya, 1997; Garba et al., 2005; Garba et al., 2008), suggesting that the disease is endemic in Nigeria.

The saliva of a rabid dog has been documented to contain high concentration of rabies virus and serve as a medium for transmission of the infection (Bishop et al., 2002; CDC, 2007; WHO, 2008). A case of bite is considered an exposure only when the virus is inoculated into a new wound of a susceptible animal. About 98 % of human rabies deaths have been documented to have been caused by almost and always bite of a rabid dog (Rupprecht, 2008). Although there are some reports of dog bite cases been documented from Veterinary teaching hospital and rabies diagnostic laboratory (Garba et al., 2008), however, informations of dog bite cases from state veterinary clinics are scanty. This study sought to investigate the documented dog bite cases reported to the Zonal Veterinary Clinic, Umuahia, Abia State in relation to prevalence of rabies cases in the region.

2 Study Area

Abia State lies within approximately latitudes 4° 40' and 6° 14' north of the equator, and longitudes 7° 10' and 8° east of the Greenwich meridian. The state covers an area of about 5,243.7 sq. km which is approximately 5.8 per cent of the total land area of Nigeria; it has seventeen Local Government Areas. Anambra State (presently Anambra and Abia States) had a 201,923 dog population (Garba, 2011). Zonal Veterinary Clinic is located in the State Capital; it is the largest Veterinary Clinic in the whole state and serves as Teaching Hospital to Michael Okpara University of Agriculture Veterinary staff and students. Most cases of dog bites are reported to the clinic for advice and appropriate action.

3 Materials and Methods

Records of 110 dog bite cases recorded between January, 2004 and June, 2013 were analyzed retrospectively. The incidence of dog bite by owned dogs and stray dogs, status of anti-rabies vaccination in dogs reported to be involved in dog bites and different group of victims bitten by dogs in terms of different age and sex were analyzed and documented.

4 Results and Discussion

Out of 110 dogs reported to be involved in dog bite cases, 90 (81.8%) offending dogs were owned dogs and 20 (18.2%) were found to be stray dogs. Analyses of vaccination status of those dogs involved in dog bite revealed that 45.4% of dogs had never been vaccinated, only 9.1% of dogs had current anti-rabies vaccination, the detail of unknown vaccination status and expired vaccination status are given in table 1. Distribution of dog bite victims by age showed that 71.8% of adults aged greater than 20 years and 28.2% of children less than 20 years of age were bitten by dogs. Sex wise distribution of victims showed that 53.6% of males and 46.4% of female were bitten by dogs in this study. Among these 110 dogs involved in dog bite cases of humans, 6% of the offending dogs showed clinical presentation of rabies though no laboratory confirmation was done.
Dog bite cases occur frequently in Abia State, however, only a few people report the incidence to clinic as most cases are treated at home by their traditional methods (Plate 1). The 110 cases analyzed in the current study is lower than that of earlier report by Bata et al (2011) who reported 277 dog bite cases in Bukuru area of Plateau State.

Table 1 Anti-rabies vaccination status of the offending dogs.

<table>
<thead>
<tr>
<th>Vaccination</th>
<th>No. of dogs</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>10</td>
<td>9.1</td>
</tr>
<tr>
<td>Never</td>
<td>50</td>
<td>45.4</td>
</tr>
<tr>
<td>Unknown</td>
<td>43</td>
<td>39.1</td>
</tr>
<tr>
<td>Expired</td>
<td>7</td>
<td>6.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>110</td>
<td>100</td>
</tr>
</tbody>
</table>

A relatively low number of dog bite cases recorded during the reported ten year period can be attributed to the traditional treatment for victims of dog bite in Abia State. The present study showed that greater percent of the offending dogs involved in dog bites were owned dogs, which is similar to the findings of earlier reports (Abubakar & Bakeri, 2012; Bata et al., 2011). This suggests that, circumstances of dog bite or transmission of rabies is not always due to stray dogs, but even the owned dogs may involve in transmission of rabies. The higher number of owned dogs suspected to be rabid in this present report may probably be due to low vaccination practice by dogs in the study area. As can be observed that the vaccination status of greater percentage of the offending dogs was not clear and most had no anti-rabies vaccination history though owned, this is also in agreement with the findings of Abubakar & Bakeri (2012).

The earlier report by Ogunkoya et al. (2012) as well as the present study indicates that there is lack of responsible dog ownership by majority of dog owners, particularly, in this study area and rabies will continue to be a problem and its eradication and control will be difficult so long as owners of dogs fail to vaccinate their dogs. These analyses showed that a relatively higher number of males victims were bitten by dogs, which is in agreement to the findings of Abubakarand Bakeri (2012).

In their study, they attributed this to the higher day to day activity of males as enshrine in the cultural and religious practices in Northern Nigeria. Conversely, the difference in male and female victim is not significant in our study as cultural and religious influence do not affect female movement in eastern part of Nigeria. Despite 6% of the offending dogs showed classical presentation of rabies and were killed, no confirmatory diagnosis was made as the National Veterinary Research Institute (NVRI), Vom is located far away to Abia.

While dog bite cases were seen more in children in many reports, in this present study; more cases were seen in adult above the age of 20 years. Only few dogs are vaccinated against rabies and even when vaccination expires, dog owners do not care to revaccinate. Male adults are more victims of dog bite for the period of study. In Conclusion rabies will continue to be a problem in the study area so long as responsible dog ownership is not in place. This study recommends that anti-rabies vaccines be made available to Veterinary and health centers, and strict laws aimed at enhancing responsible dog ownership should be put in place.

Acknowledgements

We express our profound gratitude to the Director of Veterinary Services Abia state, for granting the approval to carry out this study and Dr.C. Okereke, the head of Zonal Veterinary Clinic for his understanding and cooperation.

References


