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A study on dog bite incidence in Union Territory of Dadra & Nagar Haveli, India

V. Khan[1*], D. B. Zala,[1] K. M. Joshi and V.K. Das[2]

[1]Directorate of Medical and Health Services, UT of Dadra and Nagar Haveli, Silvassa -396230, INDIA
[2]Sri Vinoba Bhave Civil Hospital, UT of Dadra and Nagar Haveli, Silvassa -396230, INDIA
*Corresponding author. E-mail: vkdas511@gmail.com

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Abstract: The injuries caused by dog bites have grown to such epidemic proportions that they are now considered a major public health concern. The epidemiology of dog bites in the UT of Dadra & Nagar Haveli has been evaluated, for the year 2012. This assessment included victims age, sex, biting site and season of the year. During the study, a total of 938 dog bites, were reported from aforesaid place. Of all the dog bites reported, 39.6% victim belonged to age group upto 0-15 year (children) and 60.4% were more than 15 years old (adults). The majority of the incidents 40.8% occurred during the pre monsoon period (1-20 weeks). There was no case of rabies. There is a need to educate the public about the magnitude of dog-bite problems, enforce leash laws and impound stray dogs as an integral part of prevention programs.

Keywords: Dog bite, Hydrophobia, Rabies

INTRODUCTION

Dog bite causes various kinds of physical injuries, mental trauma and lethal rabies (WHO, 2002). Dog are the major vectors of rabies and 95% cases of rabies were recorded from dog bite globally (WHO, 2002). In recent times, some Asian countries such as Thailand, Philippines and Sri Lanka, have been able to reduce human rabies deaths to a great extent due to implementation of vaccine, awareness, control of dog population and health legislation, but India, neighbouring Pakistan and Bangladesh report thousands of human deaths every year (Sudarshan *et al.*, 2007). There is little information about the incidence of dog bites and mortality due to rabies because of a lack of systematic reporting and a lack of measurement of the quality and completeness of reported data (Sudarshan *et al.*, 2007). Few prior studies have investigated in different part of world from different point of view, the mortality and severity of dog bite injuries (Hansen, 1973; Morr *et al.*, 1977; Sosin *et al.*, 1992; Weiss and Coben, 1995 and Sacks *et al.*, 1996), epidemiological study of rabies (Langley, 1992; Knobel *et al.*, 2005). In Indian scenario, selected workers have indicated the incidence of dog bite and rabies in different part of the country as like Sudarshan *et al.*, 2006 and 2007. Similarly, studies have been done in selected cities like Delhi (Singh *et al.*, 2001 and Gohil *et al.*, 2003) and Bangalore (Sudarshan *et al.*, 1995) The available literature indicates that there is no published report available on the incidence of dog bite in the Union Territory of Dadra & Nagar Haveli. The present report furnishes information on the incidence of dog bite with correlation of victim age, sex, biting site, severity of dog bite, seasonality and demography in the Union Territory of Dadra & Nagar Haveli, India during 2012.

MATERIALS AND METHODS

The study was conducted retrospectively for a period of one year during the year 2012 in the Union territory of Dadra & Nagar Haveli (Latitude -20^{O}2' 51" N to 20^{O}21' 36" N, Longitude- 72^{O}54'41"N to 73^{O}13'13"N). The Medical and Health Department routinely collects information concerning incident of dog bite on weekly basis under Integrated Disease Surveillance Programme from all health care providers as presumptive surveillance. The victim's demographic information, age, sex, addresses and biting site was also noted. The health department's computerized records were reviewed to identify dog bite information to avoid the duplication of cases.

RESULTS

In 2012, there were 938 dog bite injuries reported in UT of Dadra and Nagar Haveli; the crude incidence rate was 26.05 per 10000. Fortunately, no rabies case was recorded during study. Out of nine hundred thirty eight cases, 67.3% were reported from District Hospital follow to 13.3% from Community Health Centre Khanvel, 9.5% from Primary Health Centre Amboli, 3.9% Primary Health Centre, Naroli, 2.2% from Primary Health Centre, Dudhani, 2.1% from

Primary Health Centre, Mandoni and 1.6% encountered from Primary Health Centre, Kilvani. Maximum cases 18.5 % were encountered in the age 6 -10 fallow to 15.6% in the age group 0-5 years, 11.1% in the age group 31-35 years, 9.7% in the age group, 16-20 and 21-25 years, 8.1% in the age group 26-30 years, 6.2% in the age group 36-40 years, 5.7 % in the age group 41-45 years, 5.5 % in the age group 11-15 years and 10.0% in 46 plus age group. The majority of dog bites victims (74.9%) were male and female constituted 25.1%. The most common site of bite was lower limbs (63.5%), followed by upper limbs (24.4%), hands (5.9%), head and face (3.3%) and then the abdomen (2.8%). 97 % victims had come with normal injuries and only 2.7 % victim needed to be hospitalized. The incidence of dog bites was observed to be a throughout the year. Three hundred eighty three cases (40.8 %) were reported in pre monsoon period (1-20 weeks), during the monsoon period (21-40 weeks), two hundred fifty case (26.7%) were encountered, in post monsoon period (41-52 weeks), three hundred five cases (35.5%) were noted with maximum number of cases one hundred thirty two (14.1%) during the weeks 41-45.

DISCUSSION

From 1990 to 2002, India has been quoted as reporting 30,000 human rabies deaths, accounting for nearly 60% of global mortality (WHO, 2002). The main vectors of transmission are street dogs and these are responsible for over 95% of human rabies deaths in India (Sudarshan *et al.*, 2007). Even if this figure is considered reasonably accurate, the situation would have changed in the past decade and half as a result of the overall socioeconomic development, availability of vaccines and the increasing public awareness of post exposure prophylaxis in the urban areas (Sudarshan *et al.*, 2007). Similarly, Singh *et al*., 2001, Sudarshan *et al.*, 2006 have identified dogs as being the main animal responsible for human rabies deaths in India. The annual incidence of dog bites was 26.05 per 10000 populations was quite high as compared to National survey done by Sudarshan *et al.*, 2007. The main site of bite was lower limbs, followed by bites to upper limbs, hands and head or face. Thus, there was no significant impact of seasonal variation on dog bite. The incidence of dog bite was recorded in all age groups but was elevated in age groups of 0-10 year and males were the primary victims. Males are affected more often than the females, as they consti-tuted the working majority who were actively engaged in outdoor activities. These findings corroborate similar observations from other studies. (Sudarshan *et al.*, 1995; Singh *et al.*, 2001; Gohil *et al.*, 2003). No incidence of rabies may be due to availability of vaccines and providing timely vaccine at different health care units. There is a need to educate the public about the magnitude of dog-bite problems, enforce leash laws and impound stray dogs as an integral part of prevention programs.

Table 1. Details of dog bite surveillance at Dadra and Nagar Haveli**.**

	Age distribution (%)	**Value (%)**
1	Children (< 1 5 years)	39.6
2	Adult (> 15 year)	60.4
Sex distribution (%)		
1	Male	74.9
2	Female	25.1
Seasonal variation		
1	Pre-monsoon	40.8
2	Monsoon	26.7
3	Post- monsoon	32.5
Biting site		
1	Lower limb	63.5
2	Upper limb	24.4
3	Hands	5.9
4	Head and face	3.3
5	Abdomen	2.8
Nature of injury		
1	OPD (Normal injury)	97.3
2	IPD (Severe injury)	2.7

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