

An Assessment of Rabies Free Status of the Island of Andaman, Nicobar and Lakshadweep: Results of the WHO Sponsored National Multicentric Rabies Survey

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Summary

The Islands of Andaman and Nicobar and Lakshadweep have been reported to be rabies free from time immemorial. Recently, a survey of the islands of Andaman and Nicobar & Lakshadweep was done between July and August 2003 to assess their rabies free status. It was revealed that these islands continue to remain rabies free. However, in Andamans the increasing dog population, poor vigil on import of dogs and lack of laboratory surveillance for rabies posed a threat to this status. The Lakshadweep islands, which are free of dogs, however, faced a threat from the lack of vigil on the entry and presence of cats and poor surveillance for rabies in them.

Introduction

Rabies in the animals (mostly dogs) and in the humans has been perennially present in India for many centuries. Incidentally, India has been reporting the highest number of human rabies deaths every year. According to World Health Organization (WHO) an estimated 30,000 human rabies deaths occur in India every year¹. put, a recent WHO sponsored national multicentric rabies survey conducted by the Association for Prevention and Control of Rabies in India (APCRI) in 2003 provided a revised estimate of about 20,000². However, the islands of Andaman and Nicobar & Lakshadweep have been reported to be free of rabies for many decades^{3,4}. Hence, as a part of the WHO sponsored national multicentric rabies survey, 2003 the rabies free status of these islands was reassessed to verify this privileged claim.

Materials and Methods

Survey Territories:

Andaman and Nicobar Islands. This union territory of India is a group of 572 islands in the Bay of Bengal. Altogether these islands cover a geographical area of 8249 sq. kms, with 86% of tropical rain forest and a population of 3.6 lakhs (2001 census) concentrated mainly on 38 large and small islands. The entire urban population of 100,186 (27.8%) lives in the capital town of Port Blair and its distance from mainland is about 1200 kms. The medical and health

services/status are fairly well developed.

The natural terrestrial fauna consists of Andaman wild pigs, civet, crab eating Nicobar monkeys, deers, elephants (introduced), snakes, centipedes, etc. The peridomestic animals include goats, dogs, cattle, buffaloes, etc. There are no sheep in the islands. There were an estimated 29,568 (1997) dogs in the islands as per the figures available from the Directorate of Veterinary services, Port Blair. The veterinary facilities are well developed with about 82 veterinary institutions and 238 veterinary personnel. The islands are free of rabies, rinderpest, foot & mouth disease (FMD), black quarter, anthrax and haemorrhagic septicemia⁴.

Lakshadweep Islands. This union territory of India is a group of 11 inhabited islands in the Arabian Sea. The inhabited area is about 32 sq. kms and the population is 62,000. The capital of the islands is Kavaratti, and its distance from mainland viz. Cochin is about 400 kms. The medical and veterinary infrastructures are fairly well developed. There are about 12 medical and 17 veterinary institutions. The natural fauna are predominantly marine viz. coral and fishes. The terrestrial fauna is mostly domestic animals like the goat, cow and cat. It is interesting to note that there are no dogs in the islands of Lakshadweep.

Survey Methodology:

Initially, a postal questionnaire was sent to the

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Directorates of Medical Services and Veterinary Services enquiring about the annual data on human and animal rabies for the period of 1992-2002. A reply fax was received from both the islands stating that there was no rabies in the islands for this period.

Results

Andaman and Nicobar islands. The information of live stock census of the two islands showed the presence of potential reservoirs in Andaman and Nicobar Islands and the dog population

Table-1: Live stock census in the two islands

Place	Year	Cattle	Buffalo	Goats	Pigs	Dogs	Horses /Donkey	Rabbits
Andaman & Nicobar Islands	1992	52941	14531	56160	36464	28743	—	—
	1997	60180	14204	70983	42836	29568	15	152
Lakshadweep Islands	1992	2519	—	16886	—	—	—	—
	1997	3399	—	25521	—	—	—	—

Source: Directorate of Veterinary Services, Andaman and Nicobar and Lakshadweep Islands.

Subsequently, following an expert group consultation a checklist of both medical and veterinary aspects was prepared for evaluating this claim. A WHO-APC1R1 survey team member later visited these islands viz. July 28-31, 2003, the Andamans and August 4-7, 2003

was on the rise (Table - 1). However, more recent data was not available and the next census was due in 2003. There was a steady rise in the number of dogs and cats treated both in the islands as a whole and in Port Blair, the capital town (Table - 2).

Table-2: Number of dogs treated in veterinary hospitals of Andaman & Nicobar Islands during 1998-2003

Place	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003
Andaman & Nicobar Islands+	13619	15333	17344	16251	16585
Port Blair, A & N Islands	2509	2180	3504	4742	4868

+ also includes cats, rabbits, elephants, etc.

Source: Directorate of veterinary services, Port Blair, A & N Islands

the Lakshadweep. Once in the islands, data was collected by visiting the medical and veterinary directorates, the main hospitals, the pharmacies, the sea and airports, the zoo and wildlife warden offices. The relevant data was obtained by interviewing the key staff and perusal of the records.

A visit to the main hospital in Port Blair, the capital town revealed that 5616 dog bite cases were treated in the last 5 1/2 years and practically none had received any rabies vaccine (Table - 3). Incidentally the medical services department did not have any stock of rabies vaccines. Only one private pharmacy in the town had two vials of PCEC (Rabipur) vaccine. However, the

Table-3: Number of dog bites cases treated in Port Blair, Andaman and Nicobar islands

Year	Number
1998	1032
1999	884
2000	948
2001	821
2002	1355
2003	576+
Total	5616

Source: Medical Record Department, G. B. Pant Hospital, Port Blair.

Note: 1. Includes cases of G. B. Pant Hospital, 5 Urban Health Centres and 2 Dispensaries.

2. + - Includes from January to June 2003 (6 Months) Only.

Naval Hospital (Ministry of Defence) used PCEC rabies vaccine to treat dog bite victims, about 1-2 cases per month. A visit to the Infectious Diseases ward revealed that there was no record of any human rabies case in the past. A monthly NIL report was sent regularly to Government of India, New Delhi.

Visits to the airport and seaport revealed that there was no strict vigil on entry of dogs and cats into the islands. They entered the islands without any proper veterinary examination and documentation. There was no facility and practice of quarantine of dogs and cats for rabies in the island.

The veterinary department did not have any stock of animal rabies vaccine and there was no practice of preventive vaccination of animals against rabies. The veterinarians also did not receive any pre-exposure rabies vaccination and they were of the unanimous opinion that the Andaman and Nicobar islands were free of rabies and hence rabies vaccination was not needed. Consequently, they did not conduct any postmortem examination of dogs and cats for rabies though facilities for Negri body examination (of brain samples) was available.

Free roaming street dog was a common sight in the capital of Port Blair. In the absence of any surveys it was a collective opinion of veterinarians that 80% of dogs in Andaman islands and 20% of dogs in Nicobar islands were strays. Till 2000, the stray dog control in Port Blair was done by using strychnine poisoning. However, from 2001 the animal birth control (ABC) programme was in force and by July 2003, 347 dogs had been sterilized. However, the sterilized dogs did not receive any rabies vaccine under the programme.

Lakshadweep Islands. The growing number of cattle and goats as such does not pose any rabies threat. There were no dogs in the islands, but there were cats, both pet and stray, whose numbers were not known. There was no established laboratory surveillance for rabies in the cats and other animals. There was no programme for control of cat population of the islands.

There was no practice of rabies vaccination of animals. Though import of dogs was strictly banned by port authorities, occasional entry/import of vaccinated cats as pets was reported. There was no system of monitoring other than registration at the port of embarkation viz. Cochin and there was no follow up of these animals later. There was no established facility or practice of quarantine of animals in the islands.

The veterinarians strongly opined that the islands are free of rabies from time immemorial. They did not receive any pre-exposure rabies vaccination nor did they vaccinate animals.

Except for occasional and rare instances of cat bites, the last case purported to have occurred in 1999-2000, there was no other instances of animal bites on the islands. The isolation ward of the main hospital never had any human rabies case in the past.

However, records of monthly "NIL" reports of human rabies sent regularly to Government of India, Delhi was available since 1991. Human rabies vaccines were not available in the islands. The medical authorities informed that in 1998, 5 doses of PCEC (Rabipur) vaccine was imported from the mainland to treat a person who was bitten by a dog on the mainland.

Discussion

According to the World Health Organization (WHO), a rabies-free area may be defined as one in which an effective import policy is implemented and, in the presence of adequate disease surveillance, no case of indigenously acquired rabies infection has been confirmed in humans or any animal species at any time during the previous two year⁵.

The islands of Andaman and Nicobar have been historically free from rabies. The reason for this could be its geographical isolation from mainland. The present survey revealed that it could be probably free of rabies even today. The wild reservoirs for rabies is absent as there are no foxes, jackals, wolves and bats on the islands⁴. However, there was no strict vigil on the import of dogs and cats at the airport and seaport. The stray dog population was on the rise. Earlier, keeping pedigree dogs was the privilege of a few officials of the defence department, but recently, keeping imported pet pedigree dogs was becoming popular in Port Blair even among the general population⁴. There is no regular laboratory surveillance for rabies among dogs in the islands, though facilities exists. There is no practice of using human rabies vaccines for treating animal bite victims or for pre-exposure prophylaxis of veterinarians. Despite this, there are no human rabies deaths in the past. All these suggest that the islands are free of rabies both in the animal and human populations. However, there is a need to initiate regular and proper surveillance for rabies in the dog population (including laboratory examination for evidence of rabies) keep a strict vigil on the import of dogs and cats and initiate effective control measures against the stray dog population.

The Lakshadweep islands being smaller in size, free from dogs and other wild animal reservoirs, continue to remain rabies free despite the new threat being posed by an emerging cat population in the islands. Here too, there is no strict vigilance on import of cats and there is no laboratory surveillance of rabies in cats. There is no practice of using rabies vaccines, both human and animal, for managing cat bites and for cat population respectively. Hence, there is a need

for a strict vigil on the import of cats and for surveillance of rabies in cats in the islands.

In conclusion, the islands of Andaman, Nicobar and Lakshadweep are the only privileged areas of India, which are rabies free. However, there is a need to strengthen laboratory surveillance for rabies and maintain a strict vigil on the import of animals into these islands. Additionally, there is a need for an effective stray dog population control in Andamans and a better vigil of cats in Lakshadweep.

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References

1. National Institute of Communicable Diseases, Rabies. Epidemiology, Principles of Control and treatment. ed. Sarajit Sehgal and Rajesh Bhatia, 1985. Delhi.
2. Association for Prevention and Control of Rabies in India. Assessing Burden of Rabies in India. WHO sponsored National Multicentric Rabies Survey, May 2004, KIMS, Bangalore.
3. Ichhpujani RL, Bhardwaj M, Chhabra M and Datta KK. Rabies in humans in India. In: Rabies control in Asia. Ed. Dodet B and Meslin F-X. John Libbey Eurotext, 2001, Paris.
4. Balakrishnan P and Naveen K. A. Andaman and Nicobar Islands. A rabies free zone. An overview. Journal of Association for Prevention and Control of Rabies in India. VI, 1 & 2, 2004. 16-18.
5. World Health Organization. WHO expert committee on rabies. Technical Report Series 824. 1992, Geneva.