



Mini Review Paper

Transmission of Rabies in Human and Role of Bats: A Review

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Abstract

Vampire bats have been reported to be responsible for transmission of rabies among human beings and domesticated livestock through bite wound. They are mainly found in South America.

Keywords: Rabies, Vampire bat.

Introduction

Vampire bats belong to family Desmodontidae, but taxonomists have now grouped them as a subfamily, the *Desmodontinae*, in the American leaf-nosed bat family, Phyllostomidae. These three species of vampire bats are the inhabitants of South and Latin America¹ These bat species are believed to have a common decendency belonging to different genera.

Vampire bats primarily feed on blood. This kind of their feeding habit is known as hematophagy. The common vampire bat (*Desmodus rotundus*), the hairy-legged vampire bat (*Diphylla ecaudata*) and the white-winged vampire bat (*Diaemus youngi*) are the three bat species which feed only on blood diet.

Feeding behavior

After locating the host, the vampire bat approaches towards the ground. The thermal heat from the body of the host is the warm spot on the body of the host for its biting. It creates a small incision on the skin from where the blood oozes out and does not clot easily. The bat feeds on this oozing fluid².

Vampire bats feed during the dark hours. They are non-insectivorous and emit low frequency sound waves. The vampire bats mainly feed on the blood source from mammals, birds (hairy-legged vampire bat and white-winged vampire bat) and occasionally human³.

Mode of feeding

The saliva ejected from the bat's mouth during biting contains anticoagulants which prevents the blood clotting from the bite wound. These compounds present in the saliva also prevent the constriction of blood vessel near the bite wound.

The vampire bat uses its canine and cheek teeth to shave away the body hair of the host. The sharp incisor teeth (upper jaw)

makes nearly a 7 mm long and 8 mm deep incision. These incisor teeth lack enamel and are very sharp like a blade³.

Medical implication

The anticoagulant factors present in the bat's saliva finds its implication in the human medicine. It was reported in a study in the January 10, 2003, issue of *Stroke: Journal of the American Heart Association* tested a genetically engineered drug called desmoteplase, which uses the anticoagulant properties of the saliva of *Desmodus rotundus*, and was shown to increase blood flow in stroke patients.

Transmission of the disease in human and reports available:

Only 0.5% of bats act as carrier for the rabies virus. The bats do not possess rabies originally, but the clumsy and disabled bats unable to take proper flight when come in contact to human beings get infected. The most infected vampire bats causing rabies are found in South America. However, the livestock exposed to bite from bats are more prone to acquire rabies than the bitten human beings⁴.

The latest information report registered in Year 2010 where four children in Peru died after being bitten.⁵ The reported incidences in human beings are rare.

Conclusion

Proper care and protection should be implemented for preventing the bite cases of domesticated livestock and human beings including babies and infants from the blood-sucking vampire bats to prevent the casualties from this fatal viral infection.

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