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The Dark World of Ticks

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ABSTRACT

A sneak peek into the world of ticks, more commonly known as blood-sucking parasites. In this article, we'll discuss various factors of disease transmission in addition to some fun facts about ticks. This is the beginning of your, tick talk!

Introduction:

Before taking a peek into the tiny dark world of ticks, let's first see what ticks are! Ticks are external parasitic arachnids that live by feeding on the blood of mammals, birds, and sometimes even reptiles and amphibians (3). Ticks are tiny small creatures who love having a blood feast whenever they get a chance. Ticks are arachnids with the adult ranging in size from 3mm to 5mm depending on age, gender, species, and fullness. In addition to sucking blood, they offer a ride to various pathogens being a major vector in domestic animals for various diseases.

Ticks in Pakistan

Almost 19 species of ticks are prevalent in Pakistan. Out of these, 3 important species are of hard ticks and 2 are of soft ticks. Hard ticks include *Rhipicephalus*, *Haemaphysalis*, and *Hyalomma* species. Soft ticks include *Ornithodorus* and *Argas* species (1).

Lifecycle

Ticks' lifecycle consists of four stages: egg, larva having six legs, nymph having eight legs, and adult. After the eggs hatch, ticks must have a blood feast at every stage of their life to ensure their survival. Some ticks may require upto three hosts to complete their full life cycle, and most ticks die before finding the right host for their next feeding. Most ticks are generalists when it comes to host selection. (5).

Where do ticks live?

Ever imagined where ticks live? Well, they could be your next-door neighbors or maybe living in your basement without paying rent. Ticks prefer moist dark areas with a host nearby. Most wild ticks live in wooded areas in between tall grasses and leaf litter. Ticks in urban areas prefer city parks and green spaces. Ticks prefer crevices or wooden spaces with animals nearby in the case of rural settlements (3).

Disease transmission

Ticks act as vectors of several diseases of veterinary and human importance, which lead to economic losses in case of infestation. Almost 10% of the recognized 867 tick species act as a carrier for a wide range of pathogens and are also responsible for inducing harm directly due to their feeding habit. Important pathogens include Anaplasma species, Babesia species, *Borrelia mayonii* and *Borrelia miyamotoi,* Bourbon virus, Colorado tick fever, *Ehlrichia* species, Heartland virus, Lyme disease, *Rickettsia parkeri rickettsiosis,* Rocky Mountain Spotted Fever (RMSF), Tick-borne Relapsing Fever (TBRF) and Tularemia (2, 6).

How do ticks spread diseases?

Usually, ticks find a feeding spot, grasp the skin, and cut into the skin. It then inserts its feeding tube. Nobody likes to be disturbed when eating right! For DND, ticks secrete a cement-like substance to keep it firmly attached to the surface. Ticks also secrete saliva with anesthetic properties to ensure the comfort of their host. Otherwise, they might be thrown into the corner of the room! The saliva contains pathogens that are transmitted. Sometimes, ticks feed on the blood of animals carrying blood-borne pathogens. The pathogens in this case are transferred from host to tick (2).

Control

Ticks could be hand-picked but that's not a solution when it comes to a large population. Habitat alteration is one way to eliminate ticks. Open clearings, short vegetation, and wide paths provide clear visibility. Fumigation and regular use of acaricides is another way. Reducing cover, raising ground temperature, and lowering humidity is one environmental control method because ticks best survive at 4℃ and in humid environments (4).

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