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PREVALENCE OF FLEAS IN CANINES AND RODENTS OF DEHRADUN CITY

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Abstract:- Rodent and canines are known to harbour four groups of arthropod ectoparasites fleas, ticks, mites and lice. Ectoparasites are irritating pests of human and animals. And mainly flea also spread helminthic infection in human and past of the years ago rat fleas spread most dangerous or epidemic disease called plague .Free roaming cats, rats &opossums can be source of flea that can be involved in transmission of flea borne typhus.The present investigation was carried out with aims of identification & prevalence of fleas from rodents and canines, lives in close association of human beings.

A total 50 rodent and 50 canines were examined during the six month period of study.Out of 50 canines35 dogs and 15 cats were examined for the prevalence of ectoparasites. The main criteria that are used for species identification in fleas are the presence or absence and shape of the pronotal and genal comb, length of the labial palp ,& shape of the head .

Identified three species of fleas, areXenophyilacheopis, Ctenocephalidescanis ,andCtenocephalidesfelis collected from rat ,cat &dogs respectively. Prevalence of fleas was (88.5%) and ticks (11%) in dogs. .Whereas, only 60% cats & 30 % rodents were infested by the fleas. No tick was recorded from the cats.X.cheopis is of zoonotic importance for human health.

Keywords: Prevalence of fleas , Rodent and canines , Ectoparasites.

INTRODUCTION:

Rodent and canines are known to harbour fourgroups of arthropod ectoparasites: fleas, ticks, mites and lice. Ectoparasites are irritating pests of human and animals. And mainly flea also spread helminthic infection in human and past of the years ago rat fleas spread most dangerous or epidemic disease called plague.

Some of the ectoparasites can biologically or mechanically transfer infectious agents to the human or animals and results in the spread of infection. The level of infection, intensity and activity of these vectors depends upon some factors such as abundance of various hosts, environmental conditions and locomotion (Zoghi, 2006).

Fleas are a pest to animals and man. Allergy to fleas, so-called flea bite hypersensitivity (FBH), is a major cause of dermatitis in cats and dogs. A heavy flea burden can cause anaemia , and fleas may be involved in the transmission of endoparasites such as the tapeworm Dipylidiumcaninum, and possibly of other diseases (Halliwell, 1996). The present investigation was carried out with aims of identification & prevalence of fleas from rodents and canines, lives in close association of human beings.

MATERIALS AND METHODS:

The investigation was carried out in Dehradun city in the period of March 2013 to September 2013.Survey visits were made to identify premises with dog(s) and cat(s) to interact with residents and obtain their consent to participate in the study making their dogs and cats available for examination.

Simple break back type metal spring traps were used to collect the rodents.The fur of each anaesthetized rodent and examined dogs ,cats was combed with fine tooth comb, to dislodge the ectoparasites and fine forcepwas used to remove the parasites from the skin of rodent and canines. The parasites were transferred in 70% ethanol for microscopic studies.Dehydration and fixation wasperformed to define morphological specification inlight microscopy.

RESULTS AND DISCUSSION:

A total 50 rodent and 50 canines were examined during the six month period of study.Out of 50 canines 35 dog and 15 cats were examined for the prevalence of ectoparasites. The present investigation revealed that 31(88.5%) dog out of 35 were infested with fleas and ticks .whereas, only 60% cats& 30 % rodents were infested by the fleas . Mean intensity of X. cheopis is 1.33 in rats and 1.11 for cats. Highest mean intensity 3.2 is recorded fordogs in Dehradun city(Table-1).

Table-1 Prevalence % of infection and mean intensity of ecto-parasite

Totalno. of animals	Inf/not Inf.	Prevalence% Of infection	No of parasite	species	Mean intensity
Rats- 50	15/35	30% ,70%	Fleas=20 Ticks=03	***X.cheopis*** ***Ixodids***	1.33 0.2
Dogs-35	31/4	88.5%,11%	Fleas=100 Ticks=50	***C.canis,C.felis*** ***Rhipicephalus&*** ***Heamaphysalis***	3.2 1.6
Cats- 15	9/6	60%,40%	Fleas=10 Ticks=nil	***C.canis***	1.11

Ticks were recovered from dogs and rodents only.Cetenocephalidescaniswas the most predominant (63.8%) followed by Cetenocephalidesfelis(20.7 %) and X. cheopis(15.4 %)(Table-2).

Table 2 - Prevalence of flea's species

Infected animal	C.canis	C.felis	X.cheopis
Rat	----	-----	20
Dog	73	27	-----
Cat	10	-----	-----
Prevalence	63.8%	20.7%	15.4%

Similar observationswere reported by (Ali M. Bahramiet.al, 2012) as C.canis most dominant flea in dogs of Iran and Iraq.In contrast,the cat flea, Ctenocephalidesfelis (Bouche), is the most common flea infesting dogs, cats, and opossums in Los Angeles County and is considered a significant public health pest(A Pest Bulletin County of Los Angeles - Department of Public HealthVector Management Program).

The main criteria that are used for species identification in fleas is the presence or absence and shape of the pronotal and genal combs , shape of the head.The ratflea Xenophyilacheopis(fig-1,2) identified with the absence of genal and pronotal comb ,presence of eye with inserted in front ocular bristle. The main characteristic that is used to distinguish a cat flea (Ctenocephalidescanis, fig-3,4) from dog fleas(Ctenocephalidesfelisfig-5,6). is that in the dog flea the first tooth of the genal comb is distinctly shorter than the second while in the cat fleas they are of equal length.

Rats has been reported as a vector of ectoparasite in Iran(Hanafiet.al. 2007). Earlier an ectoparasite survey of small wild mammals of Dehradun valley was conducted by (Wattelet al.,1965). He reported 36 animals comprised of seven species harboured by of fleas. Recently ,(Shashi.k.solanki et al, 2013) reported in all 18% of captured rodents wereInfested with arthropod parasites, and fleas accounting for 83.3% of total ectoparasites.

The cat fleaC.felis wasnot observed host-specific and found to be readily jumped ontodogs in its search for a suitable host asC.felis recovered from dogs also.

Further investigations are needed to analyse the intensity of ecto-parasite on animals living in close association of human residential areas.

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