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Prevalence of Gastrointestinal Parasite (*Paramphistoma Cervi*) In Domestic Animals of District Buner, KPK, Pakistan

[1]Sheeba Kanwal,[1]Shahneela Wadood, [1]Sadaf Naiz , [3]Muhammad Jamil
[2]Mujahid Irshad, [3]Muhammad Ilyas, [4]Muhammad Irshad and [3]Ijaz Malook

[1]Department Of Zoology Abdul Wali khan University Mardan, pakistan
[2]Department of Microbiology Kohat University of Science and Technology, Kohat , Pakistan
[3]Department of Biotechnology and Genetic Engineering, Kohat University of Science and Technology, Kohat , Pakistan
[4]Department of Biotechnology Bacha Khan University, Charsada, pakistan

Abstract:

Paramphistomosis is the disease, prevalent all over the world is one of the most pathogenic diseases in domesticated animals causing heavy economic loss. Paramphistomiasis are serious problem for ruminants, especially young animals. The investigation took place during November 2011 to April 2012 to screen the prevalence of parasite (paramphistoma) in cows, buffaloes, sheep's and goats in different regions of district Buner Pakistan. Samples were collected from slaughter houses, dairy farms and houses. In the present study total 480 fecal samples were studied, in which 80 fecal samples were randomly observed from each species (cow, buffalo, sheep's and goats). During collection of fecal samples the age and gender of the species were randomly collected, and seasons of the year were carefully recorded. Seasons were considered as summer (March - April) and winter (November-February). Infection rate was 10.8% in buffaloes, 11.6% in cow, 5.8% in sheep, 4.1% in goats in district Buner. Overall the highest prevalence in all animals (cows, buffaloes, sheep and goats) was recorded in the month of February (7.5%) while the lowest (1.6%) in April. Infection rate in all animals (cows, buffaloes, sheep and goats) was higher in males (8.7%) as compared to female animals (6.8 %). In age wise prevalence the higher incidence of paramphistomiasis occurred in below 3 year then above 3 year. The lowest infectious rate of prevalence of paramphistomiasis is found in goats (4.1%) in district Buner KPK Pakistan.

KEY WORDS:

Paramphistoma, Domestic Animals, KPK, Infection, Coprological Examination.

INTRODUCTION

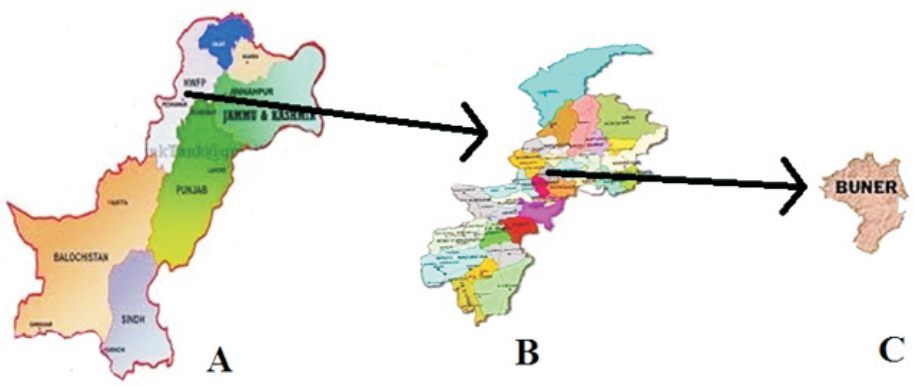
Paramphistomosis (or amphistomosis) is a disease caused by digenean trematodes belong to the family Paramphistomatidae belongs to trematodes of the order Digenea. parasitising in the rumen or paunch of cattles, species include *Paramphistomum microbothrioides, Paramphistomum cervi, and Paramphistomum liorchis. para-amphistomos.* Clinical disease on the other hand is confined to warmer tropical and sub-tropical areas of the world (Horak *et.al*; 1971). Buffalo and cattle diseases have been identified as one of the major factor, which have disrupted the development of the industry in Asia and have caused substantial economic loss to the poor subsistent farmers in the developing countries. The parasitic

diseases are not less important in buffaloes than other infectious diseases. These mainly include gastro intestinal helminthiasis, coccidiosis, fascioliosis and mange (Griffiths *et.al*; 1974). Cows and buffaloes are not only main source of animal proteins but their products such as bones, skins and goods made from their fetch are of great importance for the man. Watery diarrhea, weakness, weight loss, decrease in milk production, reduced product quality, mortality and other secondary infections are caused by trematode parasites (Gupta *et.al*; 1978, Solusby *et.al*; 1982). The gastro intestinal tract (GIT) of animals harbor a wide variety of parasites mainly helminthes, which causes clinical and sub clinical parasitism. Gastrointestinal parasites in calves lead to reduced growth and constantly hampering the development of livestock industry in Pakistan. Although no exact figure of economic losses is available but it is fact that millions of rupees are being lost due to reduced milk yield, rejection of meat and edible offals, depreciation of hides, delayed age of maturity and death particularly in calves and high production cost due to the use of drugs (Bilal *et.al*; 2009). In some countries are considered a major constraint on productivity. Likewise *paramphistomosis* infection remain with particularly in Asia, where prevalence rate of 30-60% are still recorded in some areas(Gupta *et.al*; 1985, Raza *et.al*; 2007, Liu *et.al*; 2009). The life cycle of these parasites is similar to that of Fasciola hepatica in that they require two hosts to complete their life cycle, a mammalian definitive host and a snail intermediate host In infected animals excrete eggs in the faeces. The eggs develop and hatch under suitable conditions (temperature and moisture) when the eggs have been freed from the feacal mass (Burgu et.al; 1981). Among the helminthes, trematode parasites of ruminant livestock have a world wide distribution and even have zoonotic importance (Rafique *et.al*; 2009). The present research was designed to report the seasonal and the overall prevalence of the *paramphistomes* in cows, sheeps, goats and buffaloes. Furthermore to suggest preventive measures and prevalence of *paramphistoma*, taking this background the study was conduct to find out prevalence of gastrointestinal parasites (*paramphistom*) in buffaloes, cows, sheeps and goats at different regions (Buner) of Khyber Pakhthunkhwa, Pakistan. For this purpose, 480 faecal samples were collected from sheep, goats, cows and buffaloes. Parasitological procedures including direct and indirect methods (sedimentationand floatation) used for the identification of *paramphistomes*.

MATERIALS AND METHODS

Description about Study Areas

Buner is located in the north of KPK, bordering upper Swat on the north, Malakand Agency on the west, Mardan District on the south and Hazara Division on the east. Buner is a Sanskrit word which means forest, which seems to be true because Buner is rich in forestry.Buner with an area of 1760 square kilometers lies between 34°-9' and 34°-43' N latitudes and 72°-10' and 72°-47' E longitudes. The climate of Buner district is moderate. During summer season, the climate is hot in the lower Buner(Fig 1) (Ambela) but pleasant in the upper parts (Gadezai and Gokand). The summer season is short and mild. During this season the temperature seldom rises above 40° C. The winter season is very cool and extends from November to February. Rains and snow occur during this season.



Map Scales:

$1000km^2 = 1cm$

(a) 796,096km^2=796.096cm
(b) 74,521km^2=74.521cm
(c) 1,865km^2 =1.865cm

Fig 1: Map of (A) Pakistan (B) Khyber pkhtunkhwa (C) District Buner (Scale 1cm = 1000km^2)

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COLLECTION OF SAMPLES

The investigation took place during November 2011 to April 2012 to screen the prevalence of parasite (paramphistoma) in cows, buffaloes, sheeps and goats in different regions of district Buner Pakistan. In the present study total 480 fecal samples were studied, in which 80 fecal samples were randomly observed from each species (cow, buffalo, sheeps and goats). During collection of fecal samples the age and gender of the species were randomly collected, and seasons of the year were carefully recorded. Seasons were considered as summer (March-April) and winter (November-February). Samples were randomly collected from different areas slaughter houses, dairy forms and from house hold cattles (Bufflows, Cows, Sheeps and Goats. Strict aseptic procedures were followed to keep the animal safe and healthy while collecting biological samples. All necessary ethical considerations were followed. Before collection, the animals were restrained properly and all possible hygienic measures including wearing of apron and hand gloves were taken to avoid contamination. Fresh faecal samples were also collected from the ground when the animals were found in the act of defecation. About 20-25 grams of faeces were collected from each buffalo, cow, goat and sheep. Each sample was kept in separate polythene bag, tied carefully and numbered properly.Samples were collected randomly of different gender (Male and Female) of Cows, Buffaloes, Sheeps and Goats. Collection of samples were based on different age groups of animals, average age of Buffalo is from (30 to 35), Cows (20 to 25), Sheeps (11 to 14) and Goat have(11 to 12) years.The correctly labeled and properly numbered polythene bags containing the faecal samples with all required information were brought to the laboratory. The rate of infection among the animals was derived in terms of percentage of total samples examined.

DESCRIPTION OF EGG:

The keys (Kochar and Chatterje; 2009) were used for identification of the egg of paramphistoma cervi in fresh samples of ruminants under microscope. Fecal samples were kept below 27^{0}C in freezer. The length and width of egg was 160 and 90 µm respectively, with oval shape Operculum on one pole, pale grey to greenish colour.

COPROLOGICAL EXAMINATION:

In addition to gross coprological examination by parasitological procedure including direct smear method (Urquhart *et.al* ;2011), indirect fecal floatation methods (Cable *et.al*; 1985) and sedimentation method were followed to detect the parasitic eggs in the faecal materials.ova of parasite were identified through their morphological features (Soulsby *et.al*; 1982) prevalence of parasites were recorded month wise.The age and gender were also flourished.The prevalence of the disease was recorded following the modified formula described by Thursfield (1986). The rate of infection among the animals was derived in terms of percentage (%) of total samples examind.

$$\text{Prevalence (\%)} = \frac{\text{No.of infected individuals at particular point in time)}}{\text{(No.of total individuals at particular point in time)}} \times 100$$

Direct Smear Fecal Examination:

The direct smear method for faecal examination was performed, as described by (Urquhart *et.al*; 2001). In this method a small amount of feces take on a microscope slide. Add a drop of liquid to the feces and mix thoroughly. The type of liquid added depends on what want to accomplish with the technique. As we were looking for *paramphistoma* egges in a small sample that 's why either water were used. Cover with a cover slip. Move the cover slip around until it lays flat. One should be able to read through the smear (light from the microscope must be able to pass through the sample in order to examine). Examine the slide using the 10 X objective, and then go over it place with the 40 objective (Urquhart *et.al*; 2001).It can be used in

conjunction with the McMaster technique to detect low numbers of eggs (when present below theMcMaster sensitivity of 50 eggs per gram of faeces).

Fecal Floatation Method:

In this method 3 grams of feces were take in to a container. pour 50 ml of flotation fluid (sugar solution, sodium chloride, magnesium sulphat, zink sulphat, sodium nitrate) in that container. Mix (stir) the solution thoroughly with a strring device (tongue blade or forke). pour the resultant fecal suspencion thorough a tea stainer to another container. leave the container stand for 10 minutes. press a test tube to the bottom of filtrate, left it quickly and transfer a few drops adhering to the surface of slide.The best tube ought to touch the slide for atleast 2-4 seconds for the drops to run off. mount the cover slip over the slide for microscopic examination (cable et.al; 1985).

Sedimentation Method

The sedimentation technique is a qualitative method for detecting trematode eggs (*Paramphistomum*) in the faeces because trematode eggs are relatively large and heavy compared to nematode eggs. In this technique concentrates them in a sediment. Weight or measure approximately 3 g of faeces into Container 1.Pour 40-50 ml of tap water into container 1.Mix (stir) thoroughly with a stirring device (fork, tongue blade).Filter the faecal suspension through a tea strainer or double layer of cheese cloth into Container 2. Pour the filtered material into a test tube. Allow to sediment for 5 minutes. Remove (Pipette, decant) the supernatant very carefully. Resuspend the sediment in 5 ml of water. Allow to sediment for 5 minutes.Discard (pipette, decant) the supernatant very carefully. Stain the sediment by adding one drop of methylene blue. transfer the sediment to a microslide. Cover with a coverslip.

RESULTS:

During the study period of November 2011 to April 2012, an epidemiological survey of *paramphistomum cerv*i 480 samples of goat, sheep, cow and buffalo were collected from District Buner of KPK . The rate of infection among the animals was derived in terms of percentage of total samples examind. This study includes the degree of infection gender wise, species wise and months wise. A total of 480 feacal samples from district Buner were examined out of which prevalence (%) was found 10.8% in all age groups and both gender of buffalos (Table 4.1), 11.6% in cow (Table 4.2), 4.1% in Goats (Table4.3), and 5.8% in sheeps (Table 4.4).In the present study the over all prevalence of *paramphistoma cervi* 32.3% were found to be positive in District Buner.

***Paramphistomum cervi* in buffaloes of KPK Buner**

Overall prevalence (%)

Total 120 faecal samples of buffaloes were examined in districts (Buner) of KpK the overall prevalence 10.8% was recorded (Table 1)

Month Wise Prevalence (%)

During examination of samples of buffalos the higest prevalence rate, when month wise data recorded it showed that the highest prevalence (20%) in January, its gradually decreased in february (10%) and the lowest rate were recorted in (5%) in April (Table 1). Overall prevalence were 14% recorded.

Age Wise Prevalence(%)

It was revealed that, in age wise prevalence adults which is above 3 years are slightly less infected (9.5 %) than below 3 years which is (20 %) (Table 1).

Gender Wise Prevalence (%)

In gender wise prevalence the infection of *paramphistomum* were slightly higher in male (12.1%) than in female which is (11.5%) as shown in (Table 1).

Table 1: Prevalence (%) of paramphistomiasis Months wise, Age wise and Gender wise. in buffalos at district Buner of KPK from Nov 2011 to April 2012.

	Factors	Total no. of sample observed	Total no. of sample infected	Prevalence(%)
TIME(Months)	Nov	20	2	10%
	Dec	20	3	15%
	Jan	20	4	20%
	Feb	20	2	10%
	March	20	1	10%
	April	20	1	5%
Age(years)	Above 3year	105	10	9.5%
	Below 3year	15	3	20%
Gender	Female	33	4	12.1%
	Male	87	10	11.5 %
Total		120	13	10.8%

***Paramphistomum cervi* in Cows of KPK Buner**

***Overall Prevalence* (%)**

Total 120 faecal samples of Cows were examined in districts (Buner) of KPK the overall prevalence 16.7% was recorded (Table 2)

***Month Wise Prevalence* (%)**

The research work indicated that the specific period associated with highest prevalence rate, when month wise data recorded, it showed an overall highest prevalence (20%) was in January, which gradually decreased in February (15%) followed by a decline to the lowest prevalence (0%) in April (Table 2).

***Age Wise Prevalence* (%)**

It was revealed that, in age wise prevalence adults which is above 3 years are slightly less infected (10.7 %) than below 3 years which is (17.6%) in cows.The infection rate is high in below 3 years (Table 2)

***Gender Wise Prevalence* (%)**

In gender wise prevalence the infection of paramphistomum were slightly higher in male (12.2%) than in female which is (11.4%) as shown in (Table 2).

Table 2: Prevalence (%) of paramphistomiasis in cows at district Buner of KPK from Nov 2011 to April 2012.

	Factors	Total no. of sample observed	Total no. of sample infected	Prevalence(%)
Time(Months)	Nov	20	1	5%
	Dec	20	3	15%
	Jan	20	4	20%
	Feb	20	3	15%
	March	20	3	15%
	April	20	0	0%
Age(years)	Above 3year	103	11	10.7%
	Below 3year	17	3	17.6%
Gender	Female	41	5	12.2%
	male	79	9	11.1%
Total		120	14	11.6%

***Paramphistomum cervi* in Goats of KPK Buner**

***Overall Prevalence* (%)**

Total 120 faecal samples of Goats were examined in districts (Buner) of KPK the overall prevalence 4.1% were recorded (Table 3).

***Month Wise Prevalence* (%)**

The research work indicated that the specific period associated with highest prevalence rate, when month wise data recorded, it showed an overall highest prevalence (10%) was in february, which gradually decreased in march (0%) followed by a decline to the lowest prevalence (1%) in April (Table 3).

***Age Wise Prevalence* (%)**

It was revealed that, in age wise prevalence adults which is above 2 years are slightly less infected (2.7 %) than below 2 years which is (6.7%) (Table 3).

***Gender Wise Prevalence* (%)**

In gender wise prevalence the infection of *paramphistomum cervi* were slightly higher in female (6%) than in male which is (0%) as shown in (Table 3).

Table 3: Prevalence (%) of *paramphistomiasis* Months wise , Age wise and Gender wise in goats at district Buner of KPK from Nov 2011 to April 2012.

	Factors	Total no. of sample observrd	Total no. of sample infected	Prevalence(%)
Months	Nov	20	0	0%
	Dec	20	1	5%
	Jan	20	1	5%
	Feb	20	2	10%
	March	20	0	0%
	April	20	1	1%
Age	Above 2year	75	2	2.7%
	Below 2year	45	3	6.7%
Gender	Female	37	0	0 %
	Male	83	5	6 %
Total		120	5	4.1 %

***Paramphistomum cervi* in Sheeps of KPK Buner**

***Overall Prevalence* (%)**

Total 120 faecal samples of sheeps were examined in districts (Buner) of KpK the overall prevalence 5.8% was recorded (Table 4).

***Month Wise Prevalence* (%)**

The research work indicated that the specific period associated with highest prevalence rate when month wise data recorded, it showed an overall highest prevalence (10%) in january, february,and march,which followed by a decline to the lowest prevalence (0%) in April.(Table 4).

Age Wise Prevalence (%)

It was revealed that, in age wise prevalence adults which is above 2 years are slightly less infected (1 %) than below 2 years which is (16.7%) (Table 4).

***Gender Wise Prevalence* (%)**

In gender wise prevalence the infection of *paramphistomum* were slightly more in male (6%) than in female which is (5.7%) as shown in (Table 4)

Table 4: Prevalence (%) of *paramphistomiais* Months wise, Age wise and Gender wise in sheep at district Buner of KPK from Nov 2011 to April 2012.

	Factors	Total no. of sample observed	Total no. of sample infected	Prevalence(%)
Time(months)	Nov	20	0	0%
	Dec	20	1	5%
	Jan	20	2	10%
	Feb	20	2	10%
	March	20	2	10%
	April	20	0	0%
Age (years)	Above 2 year	96	1	1%
	Below 2 year	24	4	16.7%
Gender	Female	50	3	6 %
	male	70	4	5.7%
Total		120	7	5.8%

DISCUSSION

Paramphistomum belongs to the family *Paramphistomatidae* parasitising the rumen of ruminants world wide, disease are confined to warmer tropical and sub-tropical areas of the world (Horak *et.al.*,1971).Fischoeder in 1901 estiblished the family Paramphistomatidae belongs to the trematodes (flukes) of the order Digenea. Paramphistomum cervi is one of the common parasites in the rumen and reticulum of sheep, goats, cattle and water buffaloes (Rangel Ruiz *et.al*; 2000). Among the helminthes, trematode parasites of ruminant livestock have a world-wide distribution and even have zoonotic importance (Rafique *et.al*., 2009). The occurrence of *paramphistomosis* in an area is influence by a multifactoril system that is composed of hosts, parasitic agents, transmission process and environmental effects. In natural life of the helminthiasis, the parasites and their intermediate and final hosts from an association of a potential epidemiological danger and it is important that the existence and localization of such an association should be recognized beforehand so that they can be brought under control. Paramphistoma cervi infections (*paramphistomiasis*) were analyzed in present study in cows, sheep, buffaloes and goats in District Buner from November 2011 to April 2012. Result from this study constitute that an epidemiological survey of paramphistomum cervi 480 samples of goat, sheep, cow and buffalo were collected from District Buner of KPK.Fecal samples were collected from the houses, dairy forms and examined through direct floatation method, as well sedimentation method, and direct fecal examination methods, were used to identify eggs of *paramphistomum* on the basis of there morphology. The rate of infection among the animals was derived in terms of percentage of total samples examind. This study includes the degree of infections gender wise ,species wise and months wise. A total of 480 feacal samples from district Buner were examined out of which prevalence (%) was found 10.8% in all age groups and both gender of buffaloes, 11.6% in cows, 4.1% in Goats and 5.8% in sheep.The difference is because of different geographical regions. (Gupta *et.al*., 1985; Raza *et.al*., 2007; Liu *et.al*., 2009) reported that the rate of prevelace of *paramphistomum cervi* in Asia is 30-60% are still recorded in some areas. The

prevalence of Paramphistomum cervi ie. 35.13% has been reported from Surkhet district (Parajuli,1967-92) is higher than the present prevalence i.e 34.%. But similar to present prevalance.(Parajuli *et.al*., 1967-1992).The prevalence rate of infection is comparable to the 20% infections by Harid *et al*(2006). They reported 7.3% infection in cows and 10% in buffaloes in Egypt, 16.6% in cows and 15.3 in buffaloes, similarly Mogdy et.al reported 38.92% in Egypt. Bouvry and Rau, who confirmed the prevalence of paramphistomum in cattles to be 34% in Canada. Lower prevalence of paramphistomum in cattle was recorded by Ozdal et.al, who recorded 8.95% prevalence in Turkey. Titi et.al recorded 12% prevalence of paramphistomum in cattle in Algeria. Jithendran (2000) from India 25.20% in buffaloes and 23.8% in cows by Juyal et.al (2003) and 5.94% in cows by Shanila and Hafeez (2005) from India, 13.6% in cows in turkey by Seviml et.al(2005), 17.1% by Phiri et.al (2006) from Zambian, 28% in cows from Thialand by Morkot and Sakchai (2006), 26.2% in sheep by Tony (2009) in Nigeria, 62.85% and 56.25% in buffaloes and cows by Bilal et.al (2009) in Pakistan. 28.57% in sheep, 23.80% in goats, 17.64% in cows and 20% in buffaloes by Raza (2009) in Pakistan prevalence was absorved. In the present study recorded data were show nearly similarity to above mentioned workers in various countries of the world. The different may be due to different geographical regions and varied environmental condition. Raza, Murtaza, Bachaya and Hussin In (2009) reported that 22% ruminants were infected with *paramphistoma cervi* in the area of Tehsil Jatoi of District Muzaffar Garh, prevelence rate of paramphistoma is (32.3%) respectively higher than Raza finding due to Availabilty of intermediate snail host of the Paramphistomum cervi in the research area may be one of the causes of high susceptibility of *Paramphistomum cervi* infection in ruminants the difference in the prevalence may be because of availability of intermediate snail host,climatic conditions and it may be due to some genetic factor. (Uddin *et.al*; 2006).So the difference between the present research and other finding is due to varied envoirmental condition and different geographical region. In the present study the prevalence of paramphistomiosisis (32.3%) were recorded is the Buner which is respectively different from others finding, The difference may be due to the presence of swampy area and cold area. The presence of paramphistomiasis and difference in their prevalence was influenced by local climatic conditions, presence or absence of water reservoirs, lakes, rivers and availability of suitable intermediate hosts. Maqbool *et.al*,.(2003) reported that irrigation canals have a role in distribution of *paramhpistomum* eggs. Seasonal reproduction in paramphistomum species showed marked seasonally in egg production, with peak activity during the monsoon and post monsoon months (Hanna *et.a*l; 1988, Szmidt et.al; 2000, Juyl *et.al*; 2003, Shanila and Hafeez ; 2005, Diaz *et.al*; 2007). The highest prevalence in all animals (cows, buffaloes, sheep and goats) was recorded in the month of February (7.5%) while the lowest (1.6%) in April. It was reported that infection in all animals (cows, buffaloes, sheep and goats) was higher in males (8.7%) as compared to female animals (6.8 %). In the present study it was found that infection was slightly lower in females thanmales, the reason seems to be related to social practice of keeping females under better management and feeding conditions in comparison to males which are generally let lose to graze freely in pastures (Chaudhri et.al; 1993). Sevimli et.al,.(2005) reported similar results in which the infection of males with paramphistomiasis was 3.05% times more than that in female animals. When the data were take Monthly and Age wise incidence of paramphistoma infection in cows, goats, buffaloes and sheep where analyzed, it was observed that higher incidence of paramphistomiasis occurred in the month of February, higher incidence of *paramphistomiasis* also occurred in below 3 year then above 3 year. In the present study the prevalence of *paramphistoma cervi* (32.3%) were found to be positive in District Buner in the northern side of Pakistan so Gupta Raza and Liu agree with our finding. According to (Parajuli,1967-92) The prevalence of Paramphistomum cervi 35.13% has been reported from Surkhet district so itis higher than the present prevalence i.e 32.3%. but nearest to our findings. Sheep and goat prevalence recorded by Kanyari which was 22 % in Pakistan.(Kanyari *et.al*;1997). According to the present finding the prevalence of paramphistomum in sheeps of buner is (5.8%) and (4.1%) which is collectively (10 %) respectively,so these results show that the prevalence of paramphistomum was higher in kenyari than that of Buner due to the different climatic condition. A very few investigation was done on the prevalence of amphistome parasites in goat (Haq and Shaikh, 1968; Rahman, 1969) that the infection rate is low in goat as compare to other ruminants. so it coordinate our finding that infection of goat (4.1%) were less recorded here as compare to buffaloes (10.8),(11.6%) in cow,4.1% in Goats, and 5.8% in sheep. In Pakistan two species are very common, i.e., P. explanatum and P. cervi (Khan et.al., 1988b; Khan et.al., 1989; Pal and Qayuum, 1993; Malik et.al., 1995; Azad et. al., 1997) so this result is agree with previous report by khan(1988,1989) that paramphistomum cervi are also found in District Buner and causing paramphistomiasis infection in goat, sheeps, cows and buffloes. The present survey,demonatated that prevalence of Paramphistomum cervi was recorded to be highest in cows (11.6%), followed by buffaloes (10.8%), and sheep (5.8%) the lowest rate ofinfection were recorded in goat (4.1%).

CONCLUSION

In the light of above discussion, it is suggested that epidemiological study under taken at districts (Buner) of KPK under different conditions revealed that infection rate was higher in cows followed by buffaloes and sheep and lower in goats. When the data on monthly, and seasonal incidence of *paramphistoma* infection in cows, goats, buffaloes and sheep where analyzed, it was observed that higher incidence of paramphistomiasis occurred in the month of February and lowest is recorded in april, higher incidence of paramphistomiasis also occurred in males then females. The prevalence of paramphistomiasis infection were higher in below 3 year in cows, buffaloes and below 2 year in goats and sheep than the adults which is above 2,3 year respectively. Rains and snow occur during December and January so after this period in February high infection was noted. The present study report will be use full to increase the awareness of prevalence of the disease in the study area.

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