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Clinico-Epidemiological Profile of Intestinal Ascariasis among Children at a Peripheral Health Centre In Kashmir, India.

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ABSTRACT

Background- Ascariasis is the commonest intestinal nematodal infestation in man. The aim of this study is to see the clinic-epidemiological profile of ascariasis among the young children of a peripheral health centre of Kashmir**.**

Methods-This is a hospital based cross sectional study from January 2021 to November 2021

Inclusion criteria-Children aged six months to twelve years

Exclusion criteria-Extra Gastrointestinal Ascariasis

Diagnosis-is made by faecal smears, USG examination

Results-We received a total of 100 patients of 6 to 12 years of age. The Mean age SD at presentation is 4.2 years**,** 55% were males, the other demographic results include 55% cases which belong to lower socioeconomic class, 72% belong to the hilly areas, 32% patients were asymptomatic at diagnosis, 17% patients had intestinal obstruction.

Conclusion- The burden of intestinal ascariasis is still high among the children in peripheral regions which can be associated with improper hygiene, drinking untreated water, inadequate deworming and lack of medical facilities.

Keywords: Ascariasis, Children, Peripheral study

I. INTRODUCTION

Ascariasis is caused by a Nematode, Ascarislumbricoides. Adult worms of asacarislumbricoidis inhabit the lumen of small intestines. Ascaris has a huge reproductive potential. A gravid female worm can produce upto 200000 eggs per day. After passage through faeces eggs embroyanate and become infective in 5-10 days under plausive environmental conditions. Globally, more than 1.42 billion people are infected with ascariasis. It is the most prevalent human helminthiasis in the world. It is the most common in tropical areas (South America, Africa, Asia) where environmental conditions are optimal for maturation of ova in the soil.

Transmission is primarily hand to mouth [1] but may also involve ingestion of contaminated raw fruits and vegetables. Transmission is enhanced by the high output of eggs by fecund female worms and resistance of the ova to the outside environment. Ascaris eggs can remain viable at 5-10°C (41-50°F) for as long as two years.

The clinical presentation depends on the intensity of infection and the organs involved. Most individuals have low to moderate worm burdens and have no symptoms or signs. Vague abdominal complaints have been attributed to the presence of adult worms in the small intestine, although the precise contribution of the parasite to these symptoms is difficult to ascertain.

A more serious complication occurs when a large mass of worms leads to acute bowel obstruction. Children with heavy infections may present with vomiting, abdominal distention and cramps. In some cases, worms may be passed in the vomitus or stools. Ascaris worms occasionally migrate into the biliary and pancreatic ducts, where they cause cholecystitis or pancreatitis [2]. Worm migration through the intestinal wall can lead to peritonitis. Dead worms can serve as a nidus for stone formation. Studies show that chronic infection with A. lumbricoides (often coincident with other helminth infections) impairs growth, physical fitness, and cognitive development. [3]

Microscopic examination of faecal smears can be used for diagnosis because of the high number of eggs excreted by adult female worm. [4]
A high index of suspicion in the appropriate clinical context is needed to diagnose pulmonary ascariasisor obstruction of the gastrointestinal tract. Ultrasound examination of the abdomen is capable of visualizing intraluminal adult worms.
We performed this study to know clinical and epidemiological profile of human intestinal ascariasis in a peripheral health centre of Kashmir valley

II. OBJECTIVES

To study clinico-epidemiological profile of intestinal ascariasis in children at a peripheral health centre of Kashmir.

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III. METHODS

This was a hospital based cross sectional study done in sub district hospital Kupwara from Jan 2021-Nov 2021.The study included children from 6 months to12 years of age.

Those with diagnosis of biliary, pulmonary or other extra gastrointestinal ascariasis were excluded from the study.

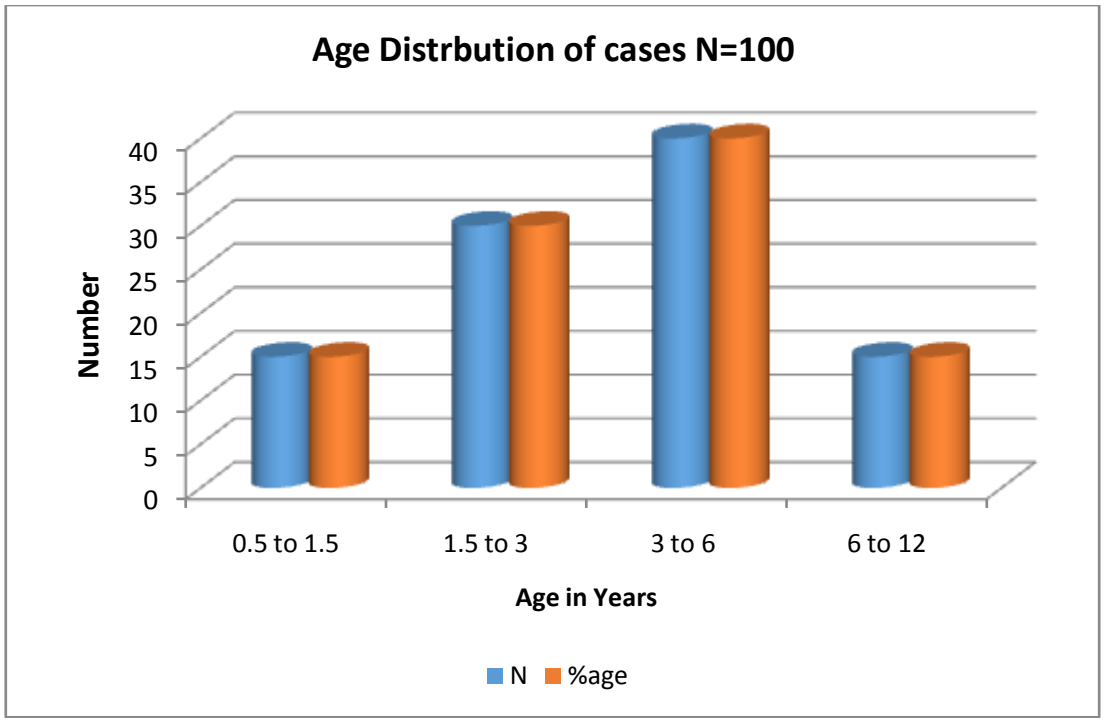
Diagnosis was made by examination of faecal smears, apart from passage of worms and USG visualization of intraluminal worms.

Socioeconomic class was determined by using modified Kuppuswamy scale (updated for 2021).

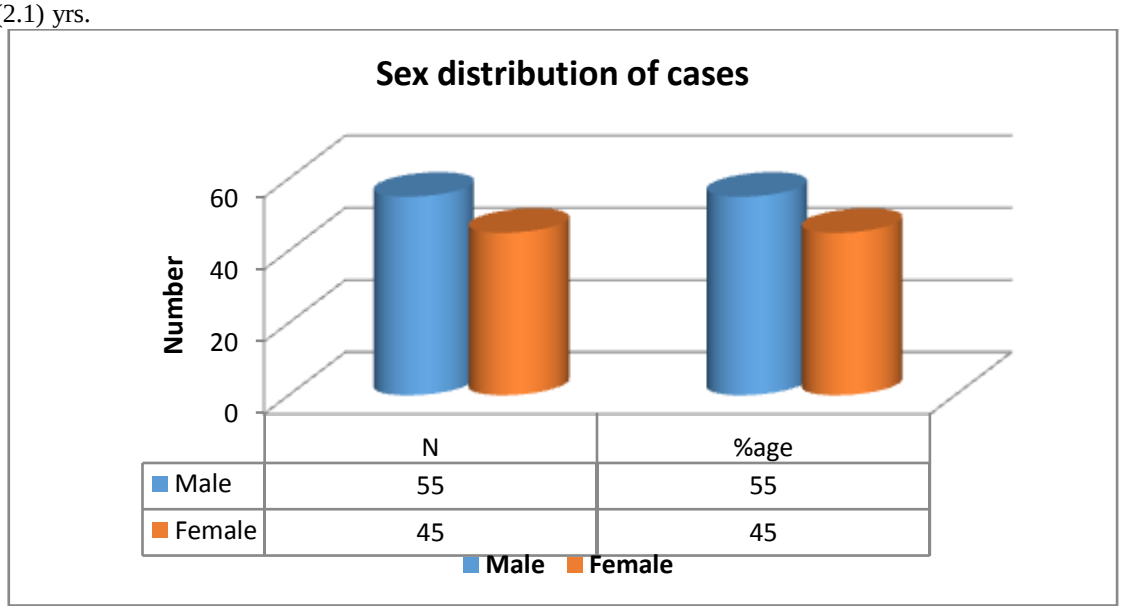
Criteria for adequate deworming was applied as per WHO.

Further all data was analysed statistically using SPSS software and Microsoft Excel.

IV. RESULTS AND OBSERVATIONS



A total of 100 patients from 6 months to 12 yrs of age were studied. The mean age (SD) at presentation was 4.2(2.1) yrs.



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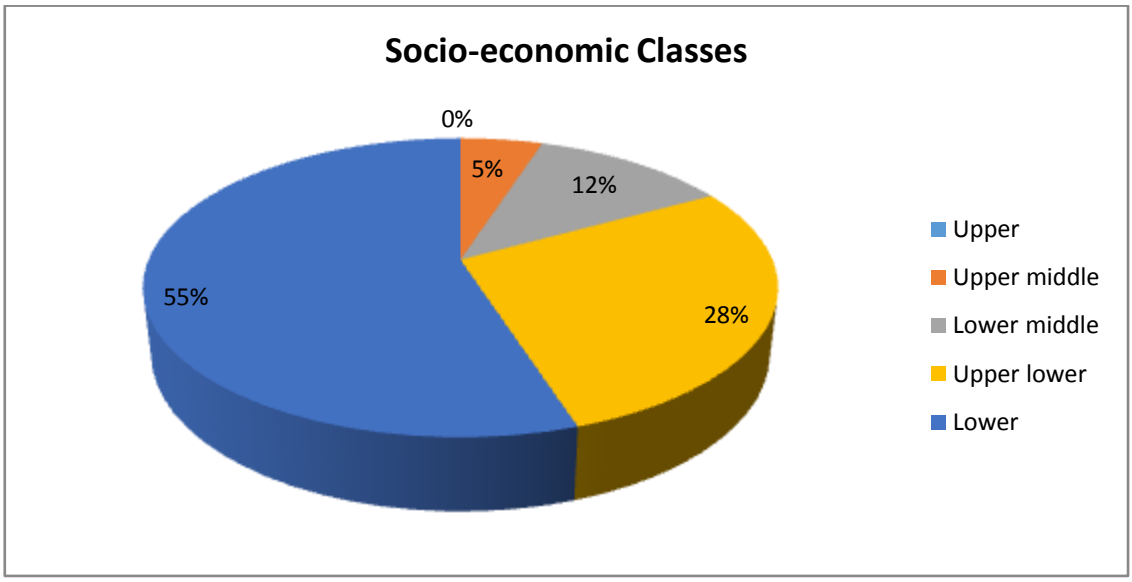
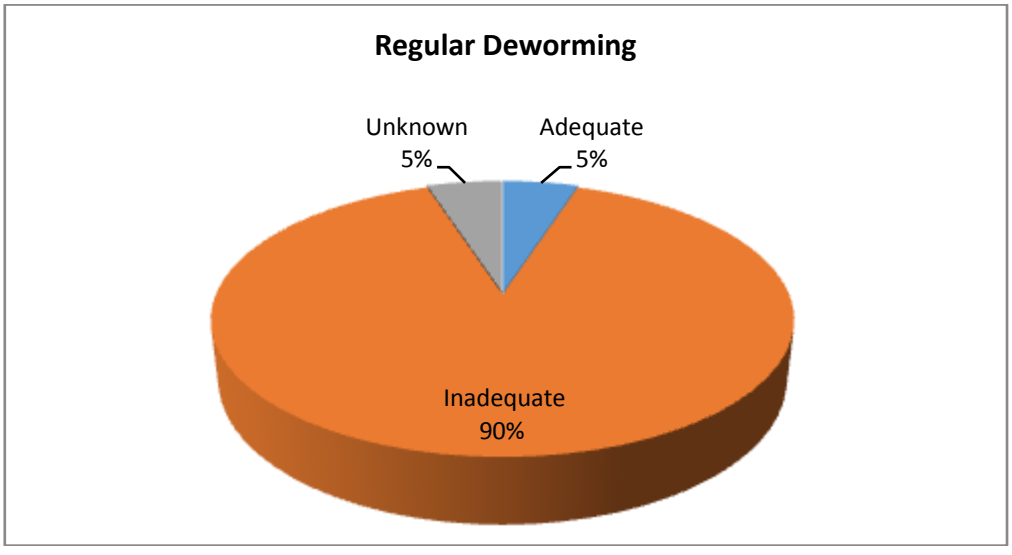
Among the patients 55% were males and 45% were females.

Among other features it was observed that as per modified Kuppuswamy scale (updated for 2021), 55% patients belonged to lower socio economic class whereas 28%,12%,5% belonged to upper lower, lower middle and upper middle classes respectively.

It was also found that 90% of patients were not dewormed adequately as per WHO criteria whereas deworming status was unknown in 5% of patients.

Among 100 patients 72% belonged to hilly areas and 28% were residing in plain areas.





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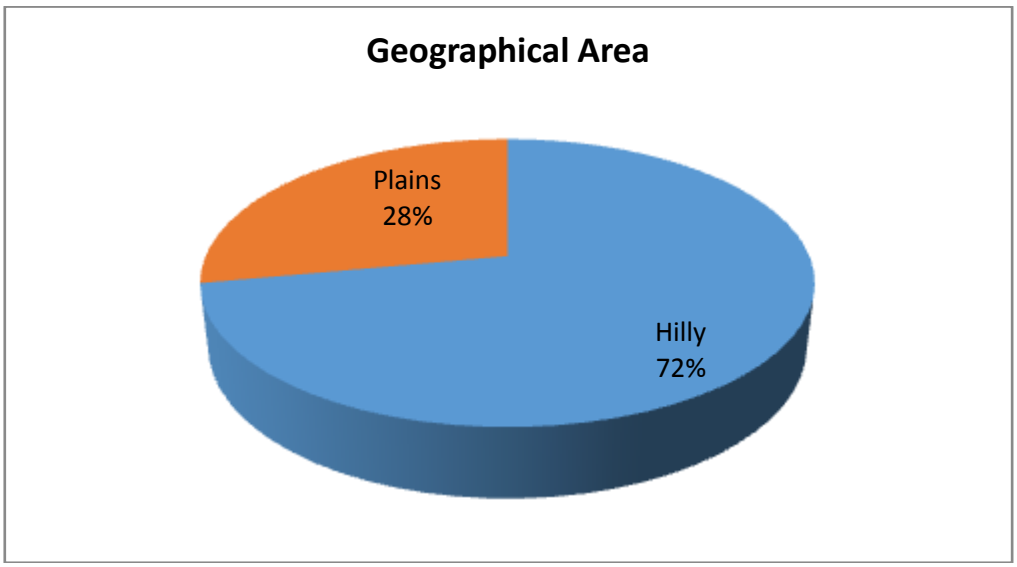

Among 100 patients studied 32 patients were asymptomatic and were diagnosed by stool microscopy only. Passage of adult worms was found in 18% of patients.28% patients presented with intermittent abdominal pain whereas 17% present in partial or complete intestinal obstruction.

V. DISCUSSION

Intestinal ascariasis is most common nematodal infestation in humans [5]. Its etiology is primarily hand to mouth transmission depending primarily on hygiene and socioeconomic status.

This study on intestinal manifestation of Ascarislumbricoides infection was done in a peripheral hospital of Kashmir to add knowledge and further the understanding of intestinal ascariasis because it allows identification of those individuals at risk from pathology and nutritional disturbances and yields valuable background information, essential for the implementation of control procedures and study of transmission dynamics.

In our study we found that majority (70%) of patients were in age group of 2 to 6 years of age, showing the importance of deworming in this age group. Further it was found that 88(%) patients belonged to lower socioeconomic class as per modified Kuppuswamy scale, indicating a close correlation with deficient resources to avail adequate hygienic conditions [6].

Further it was found that 90% of patients were those who were not adequately dewormed as per WHO criteria (annual deworming where baseline prevalence is > 20% and biannual where baseline prevalence is > 50%). Our findings were consistent with study done by Clarke et al [7].

Further it was found that 72% patients belonged to backward hilly terrain, suggesting a correlation with deficient public health and hygienic facilities

Table 4: clinical profile of cases.(n=100)

Characteristic	N (%)	Mean age (yrs)±SD
Asymptomatic	32 (32%)	6.4± (2.1
Passage of worms per rectum	18 (18%)	5.5± 1.9
Intermittent abdominal pain	28 (28%)	4.2± 2.7
Obstruction (partial or complete)	17 (17%)	3.8± 2.4

We found that 32% cases were asymptomatic with diagnosis done only by microscopic examination of faecal smears. Passage of adult worms was found in 18% of patients.28%

patients presented with intermittent abdominal pain. Our findings were consistent with study done by Jourdan et al [8].

The risk of acute pathology, for example, Intestinal obstruction is well documented, increasing as A. Lumbricoides infection intensity increases. Our findings showed that 17% cases presented with partial or complete intestinal obstruction, requiring surgical consultations. This shows the importance of timely deworming to decrease morbidity and mortality.

Our study will help public health professionals, paediatricians and surgeons to understand clinical and epidemiological profile of intestinal ascariasis so that appropriate measures can be taken to reduce ascariasis related morbidity and mortality.

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