



# COVID-19 And Intestinal Parasitic Infections: A Retrospective Analysis From Northern India

Authors: <sup>1</sup>Dr. Pratiksha Kamboj, <sup>2</sup>Dr. Deepika Chakraborty, <sup>3</sup>Dr. Yogendra Pratap Mathuria, <sup>4</sup>Dr. Deepjyoti Kalita

<sup>1</sup>Senior Resident, All India Institute of Medical Sciences, Rishikesh, <sup>2</sup>Senior Resident Department of Microbiology, Gobind Ballabh Pant Institute of Post Graduate Institute of Medical Education and Research, New Delhi, <sup>3</sup>Professor and Head, All India Institute of Medical Sciences, Rishikesh, <sup>4</sup>Associate Professor, All India Institute of Medical Sciences, Guwahati

APCCMI2025  
BANGKOK

RES-145

## INTRODUCTION

- The COVID-19 pandemic has led to a diminished focus on parasitic infections, resulting in a limited understanding of their dynamics and highlighting the need for further investigation to assess the full extent of the impact.

## METHODS

- A cross-sectional study at AIIMS Rishikesh was conducted from January 2019 to December 2022. Stool samples were examined for adult worms and wet mounts
- The study divided the timeline into pre-COVID, early COVID-19 (ivermectin included), and late COVID (ivermectin withdrawn) pandemic compartments.
- The overall positivity rate was compared using Chi-square test and Bonferonni adjustment.

## RESULTS

- A total of 5389 patients with clinically suspected intestinal parasitic infections were included in the study
- During COVID-19, a maximum positivity rate (1.67%) was after the removal of ivermectin from the treatment regime by ICMR as compared to when included in the treatment regime (1.13%)
- During the post-ivermectin period, there was an immediate fall in the positivity rate (0.14%) from September to December which was followed by an increase in the positivity rate (2.24%).

Figure 1: Age-wise distribution of samples

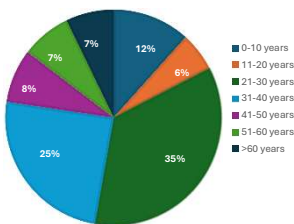


Figure 2: Gender-wise distribution of samples

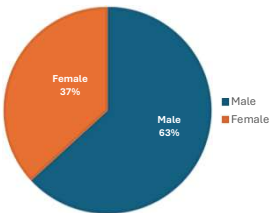


Fig: 3 Prevalence of intestinal parasites in different age groups

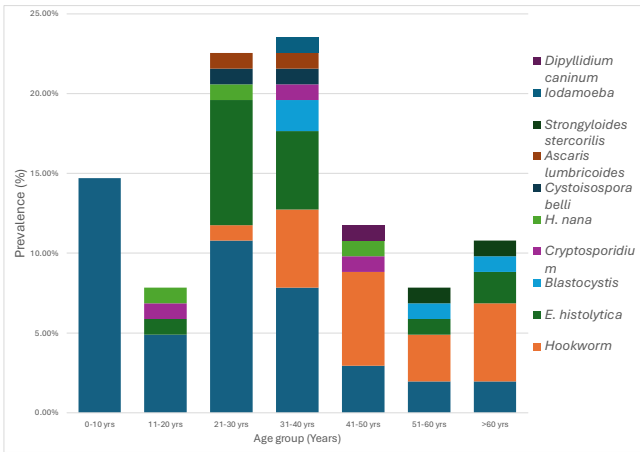
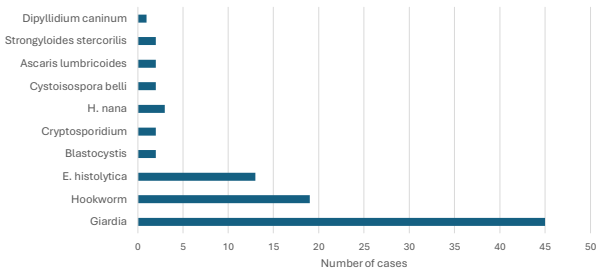


Fig: 4 Prevalence of different intestinal parasites



## RESULTS

Fig: 4 Line diagram showing the Positivity rate among suspected cases of "intestinal parasitosis" across the study timeline

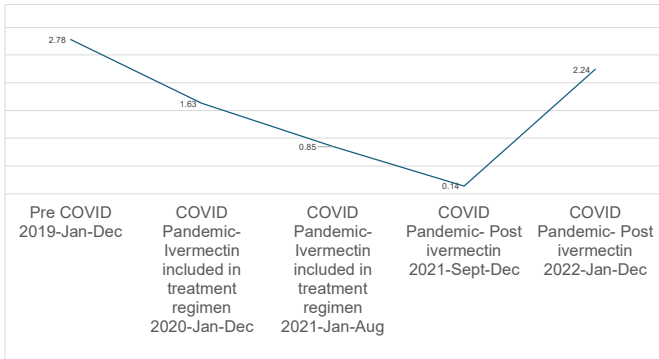


Table1 : Year-wise distribution of study population and laboratory-confirmed cases (N=5389)

A	YEAR	MONTHS	MALE	FEMALE	TOTAL SAMPLES (N)	CASES (n)	PERCENTAGE [n/N*100] %
Pre COVID	2019	Jan-Dec	860	470	1330	37	2.78
COVID Pandemic - Ivermectin included in treatment regimen	2020	Jan-Dec	361	190	551	9	1.63
					942	8	0.85
COVID Pandemic - Post ivermectin	2021	Jan-Aug	591	351	692	1	0.14
	2022	Jan-Dec	1146	728	1874	42	2.24

## DISCUSSION

- The study highlights that the age group 21-40 years was the most affected by intestinal parasitic infections, with Giardia detected in 46 cases (45.1%), Hookworm in 20 cases (19.61%), and Entamoeba histolytica in 17 cases (16.83%) being the most frequently isolated parasites. Males were predominantly affected (65.98%) compared to females (34.02%), consistent with studies from India and Iran. The positivity rate among suspected patients was higher prior to the COVID-19 pandemic (2.78%) than during the pandemic (1.48%), aligning with findings from Iran, Saudi Arabia, and Turkey.
- The protozoan infections showed a significantly higher positivity rate (76.47%) compared to helminthic infections (23.59%), consistent with both national and international studies. Notably, when ivermectin was removed from the COVID-19 treatment regimen, there was an increase in the positivity rate of intestinal parasitic infections (1.67%) compared to when ivermectin was part of the regimen (1.13%). Following the cessation of ivermectin use, an immediate drop in positivity rate (0.14%) was observed from September to December, followed by a rise to 2.24%, indicating a residual effect of ivermectin on controlling intestinal parasitic infections.
- This novel study from northern India underscores the impact of COVID-19-related treatment protocols, especially ivermectin, on the prevalence of intestinal parasitic infections, and is concordant with regional and international epidemiological evidence.

## CONCLUSION

Our study showed an effect of ivermectin on giardia, but as it's not the standard treatment, further research is needed to determine if the results were due to the drug itself or to improved sanitation and lifestyle changes during the pandemic.

## REFERENCE

- Khanal L, Choudhury D, Rai S, Sapkota J, Barakoti A, Amatya R, Hada S. Prevalence of intestinal worm infestations among school children in Kathmandu. *Nepal*. 2011;13:272-274
- Daryani A, Hosseini-Teshnizi S, Hosseini SA, Ahmadpour E, Sarvi S, Amouei A, Mizani A, Gholami S, Sharif M. Intestinal parasitic infections in Iranian preschool and school children: a systematic review and meta-analysis. *Acta Trop*. 2017;169:69-83. doi: 10.1016/j.actatropica.2017.01.019.
- Teimouri A, Keshavarz H, Mohtasebi S, Goudarzi F, Mikaeli F, Borjian A, Allahmoradi M, Yimam Y, Abbaszadeh Afshar MJ (2020) Intestinal parasites among food handlers in Iran: a systematic review and meta-analysis. *Food Microbiol* 95:103703. <https://doi.org/10.1016/j.fm.2020.103703>
- Afshar MJA, Mehni MB, Rezaeian M, Mohebbi M, Baigi V, Amiri S, Amirshakeri MB, Hamidinia R, Samimi M (2020) Prevalence and associated risk factors of human intestinal parasitic infections: a population-based study in the southeast of Kerman province, southeastern Iran. *BMC Infect Dis* 20:12. <https://doi.org/10.1186/s12879-019-4730-8>
- Mohd Saqib Hasan., et al. "Impact of the Covid-19 Pandemic on Intestinal Parasitic Infections: A 5-Year Retrospective Study in a Tertiary Care Hospital in Lucknow". *Medicon Medical Sciences* 6.5 (2024): 37-41
- Meena, Suneeta & Meena, Jitendra & Kumar, Dinesh & Mathur, Purva. (2023). Spectrum and Trends of Intestinal Parasitic Infections at a Tertiary Care Hospital during Pandemic Times: A Laboratory-Based Retrospective Study. *Journal of Laboratory Physicians*. 15. 10.1055/s-0043-1768169