

## Parasitic Diseases: An Overview

Sharon A. Bentley\*

Department of science and technology, University of Valencia, Spain

### Abstract

Parasitic diseases are infections caused by parasites, which are organisms that live on or in a host and derive nutrients at the host's expense. These diseases affect millions of people worldwide and are especially prevalent in tropical and subtropical regions. They can have a significant impact on public health, economic productivity, and overall quality of life. This article aims to provide an overview of parasitic diseases, including their types, symptoms, transmission, diagnosis, treatment, and prevention. Parasitic diseases are infections caused by parasites—organisms that depend on a host for survival while causing harm to the host. These diseases significantly impact global health, particularly in tropical and subtropical regions, where environmental conditions favor the transmission of various parasites. Parasitic diseases can be classified into three main categories: protozoan infections (e.g., malaria, amoebic dysentery, leishmaniasis), helminthic infections (e.g., schistosomiasis, ascariasis, lymphatic filariasis), and ectoparasitic infections (e.g., scabies, lice). Symptoms vary depending on the type of parasite and may include fever, gastrointestinal disturbances, fatigue, and skin lesions. Complications can arise if left untreated, leading to severe health consequences, including organ damage, anemia, and even death. Transmission routes for these diseases include vector-borne pathways, fecal-oral routes, direct contact, and soil transmission, with risk factors such as poor sanitation, close contact with infected individuals, and living in endemic areas.

### Introduction

Parasitic diseases represent a significant global health concern, affecting millions of individuals, particularly in tropical and subtropical regions. These diseases are caused by parasites, which are organisms that rely on a host for their survival, often at the expense of the host's health. The World Health Organization estimates that over a billion people are infected with at least one type of parasitic disease, highlighting the pervasive nature of these infections. Parasitic organisms can be broadly classified into three categories: protozoa, helminths, and ectoparasites. Protozoa are single-celled organisms that can multiply within their host, leading to various diseases such as malaria, which is transmitted through the bites of infected *Anopheles* mosquitoes, and amoebic dysentery, caused by *Entamoeba histolytica* through contaminated food and water. Helminths are multicellular organisms, commonly referred to as worms, which can inhabit various parts of the body. Significant helminthic infections include schistosomiasis, caused by *Schistosoma* species, and ascariasis, resulting from infection with *Ascaris lumbricoides*. Ectoparasites live on the surface of the host, such as lice and mites, and can cause conditions like scabies. The symptoms of parasitic diseases can be diverse and may include fever, fatigue, gastrointestinal issues, and skin irritations. Severe cases can lead to complications such as organ damage, anemia, and even death. The transmission of parasitic diseases occurs through various routes, including vector-borne transmission, fecal-oral pathways, and direct contact with contaminated surfaces or infected individuals. Risk factors for these diseases include poor sanitation, lack of access to clean water, and close living conditions, particularly in low-resource settings [1].

### Methodology

Parasitic diseases can be broadly categorized into three groups based on the type of organism causing the infection: protozoa, helminths, and ectoparasites.

**Protozoan infections:** Protozoa are single-celled organisms that can cause various diseases. Notable examples include:

**Malaria:** Caused by *Plasmodium* species, malaria is transmitted through the bite of infected *Anopheles* mosquitoes. Symptoms include fever, chills, and flu-like illness, which can lead to severe complications

and even death if left untreated [2].

**Amoebic dysentery:** Caused by *Entamoeba histolytica*, this disease leads to severe diarrhea and abdominal pain. It is often transmitted through contaminated food and water.

**Leishmaniasis:** Transmitted by sandfly bites, leishmaniasis can cause skin ulcers or affect internal organs, leading to severe health complications [3].

**Helminthic infections:** Helminths are multicellular worms that can inhabit the human body. Common helminthic infections include:

**Schistosomiasis:** Caused by *Schistosoma* species, this disease is prevalent in freshwater areas and can lead to severe organ damage. Infection occurs when cercariae, the larval form of the parasite, penetrate the skin [4].

**Ascariasis:** Caused by *Ascaris lumbricoides*, this roundworm infection affects the intestines and is transmitted through contaminated soil or food [5].

**Lymphatic filariasis:** Caused by filarial worms such as *Wuchereria bancrofti*, this disease leads to severe swelling of limbs and genitalia and is transmitted by mosquito bites.

**Ectoparasitic infections:** Ectoparasites live on the surface of the host. Common ectoparasitic diseases include:

**Scabies:** Caused by the *Sarcoptes scabiei* mite, scabies leads to

\*Corresponding author: Sharon A. Bentley, Department of science and technology, University of Valencia, Spain, E-mail: bentley900@gmail.com

Received: 01-Sep-2024, Manuscript No: JNID-24-151166, Editor Assigned: 04-Sep-2024, Pre QC No: JNID-24-151166 (PQ), Reviewed: 18-Sep-2024, QC No: JNID-24-151166, Revised: 22-Sep-2024, Manuscript No: JNID-24-151166 (R), Published: 29-Sep-2024, DOI: 10.4172/2314-7326.1000526

Citation: Bentley SA (2024) Parasitic Diseases: An Overview. J Neuroinfect Dis 15: 526.

Copyright: © 2024 Bentley SA. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

intense itching and skin irritation [6].

**Lice infestations:** Head lice and body lice feed on human blood, causing itching and irritation. They are often transmitted through close contact or sharing personal items [7].

### Symptoms and complications

The symptoms of parasitic diseases can vary widely depending on the type of parasite and the affected body system. Common symptoms include:

**Fever:** Often seen in infections like malaria.

**Fatigue:** General malaise and tiredness are common.

**Gastrointestinal Issues:** Nausea, diarrhea, abdominal pain, and weight loss can occur, particularly in infections like amoebic dysentery and ascariasis [8].

**Skin Manifestations:** Rashes, itching, and lesions may appear in ectoparasitic infections like scabies and leishmaniasis [9].

**Swelling:** Infections like lymphatic filariasis can cause significant swelling of limbs or genitals.

Complications can arise if parasitic infections are left untreated. Severe cases may lead to organ damage, anemia, malnutrition, and even death. For example, untreated malaria can result in cerebral malaria, a life-threatening condition characterized by severe neurological impairment [10].

### Conclusion

Parasitic diseases remain a significant global health challenge, particularly in developing countries. Understanding the types, symptoms, transmission routes, and treatment options is crucial for effective prevention and management. Continued research, public health initiatives, and community education are essential to reduce the burden of parasitic diseases and improve health outcomes for affected populations. By addressing the root causes of transmission and ensuring access to appropriate healthcare, we can mitigate the impact of these diseases and enhance the quality of life for those at risk. Parasitic diseases remain a significant global health challenge, impacting millions, particularly in resource-limited regions. Understanding the complexity of these diseases is crucial for effective management and

control. Advances in laboratory techniques, molecular diagnostics, and epidemiological research have improved our ability to identify, treat, and prevent parasitic infections. Continued efforts in health education, vector control, sanitation improvements, and surveillance are essential for reducing transmission rates and disease burden. As global travel increases and climate change alters ecosystems, the risk of parasitic diseases may expand beyond traditional endemic regions. Collaborative approaches involving governments, healthcare organizations, and communities are vital to address these challenges. Furthermore, ongoing research into vaccines and novel therapeutic strategies holds promise for more effective interventions.

### References

1. Alhaji TA, Jim-Saiki LO, Giwa JE, Adedeji AK, Obasi EO (2015) Infrastructure constraints in artisanal fish production in the coastal area of Ondo State, Nigeria. *IJRHSS* 2: 22-29.
2. Gábor GS (2005) Co-operative identity-A Theoretical concept for dynamic analysis of practical cooperation: The Dutch case. Paper prepared for presentation at the XIth International Congress of the EAAE (European Association of Agricultural Economists), 'The Future of Rural Europe in the Global Agri-Food System', Copenhagen, Denmark.
3. Gbigbi TM, Achoja FO (2019) Cooperative Financing and the Growth of Catfish Aquaculture Value Chain in Nigeria. *Croatian Journal of Fisheries* 77: 263-270.
4. Oladeji JO, Oyesola J (2000) Comparative analysis of livestock production of cooperative and non-cooperative farmers association in Ilorin West Local Government of Kwara State. *Proceeding of 5<sup>th</sup> Annual Conference of ASAN* 19-22.
5. Otto G, Ukpere WI (2012) National Security and Development in Nigeria. *AJBM* 6:6765-6770
6. Shepherd CJ, Jackson AJ (2013) Global fishmeal and fish-oil supply: inputs, outputs and markets. *J Fish Biol* 83: 1046-1066.
7. Food and Agriculture Organization of United Nations (FAO) (2009) *The State of World Fisheries and Aquaculture 2008*. Rome: FAO Fisheries and Aquaculture Department.
8. Adedeji OB, Okocha RC (2011) Constraint to Aquaculture Development in Nigeria and Way Forward. *Veterinary Public Health and Preventive Medicine*. University of Ibadan, Nigeria.
9. Food and Agriculture Organization (2010-2020a). *Fishery and Aquaculture Country Profiles*. South Africa (2018) Country Profile Fact Sheets. In: FAO Fisheries and Aquaculture Department. Rome: FAO.
10. Digun-Aweto O, Oladele, AH (2017) Constraints to adoption of improved hatchery management practices among catfish farmers in Lagos state. *J Cent Eur Agric* 18: 841-850.