

Unveiling Leprosy: Exploring the Depths of Antiquity Disease

Verna Asish*

Department of Bacteriology, London Research Institute, The Francis Crick Institute, Lincoln's Inn Fields Laboratories, London, United Kingdom

DESCRIPTION

Leprosy, also known as Hansen's disease, has etched its presence in human history for thousands of years. Despite significant medical advancements, misconceptions and stigmas surrounding leprosy persist. This article delves into the intricate facets of leprosy, exploring its history, clinical manifestations, current status, and the ongoing efforts to eliminate the disease.

Historical significance

Leprosy has deep historical roots, dating back to ancient civilizations. References to the disease are found in ancient texts, including the Bible and various Hindu and Buddhist scriptures. Societal fears and misunderstandings led to the segregation and ostracization of individuals with leprosy, perpetuating the notion that it was a curse or punishment [1].

The causative agent of leprosy, *Mycobacterium leprae*, was identified by the Norwegian scientist Gerhard Armauer Hansen in 1873. This discovery marked a pivotal moment in understanding the bacteriological basis of the disease, separating it from historical misconceptions.

Clinical manifestations

Leprosy primarily affects the skin, peripheral nerves, and mucous membranes. The clinical spectrum of the disease is broad, ranging from mild, self-limiting forms to more severe, debilitating manifestations. The two major forms of leprosy are lepromatous leprosy and tuberculoid leprosy, with various intermediate forms.

Lepromatous leprosy is characterized by widespread skin lesions, nerve involvement, and the presence of numerous bacteria in the tissues. In contrast, tuberculoid leprosy presents with fewer skin lesions, peripheral nerve damage, and a limited number of bacteria. The spectrum between these two poles represents borderline forms of the disease.

Transmission and immune response

M. leprae is primarily transmitted through respiratory droplets, but the exact mechanism of transmission remains incompletely understood. Not everyone exposed to the bacterium develops clinical disease, as the majority of individuals have natural immunity. The interplay between the bacterium and the host's immune response determines the clinical outcome.

Leprosy's characteristic feature is its predilection for peripheral nerves [2]. The bacterium invades Schwann cells, leading to nerve damage and subsequent sensory and motor impairment. The chronic course of the disease can result in deformities and disabilities, further contributing to the historical stigma associated with leprosy.

Global status and elimination efforts

Although leprosy is no longer a widespread public health threat, it persists in certain regions, particularly in tropical and subtropical areas [3]. According to the World Health Organization (WHO), more than 200,000 new cases were reported globally in 2020. India, Brazil, and Indonesia are among the countries with the highest prevalence.

The WHO launched the Global Leprosy Strategy 2016–2020 with the goal of accelerating efforts towards a leprosy-free world [4]. The strategy focuses on early detection, preventing disabilities, and addressing the social consequences of the disease. Integration of leprosy services into existing healthcare systems and community-based interventions are key components of the strategy [5].

Diagnosis and treatment

Early diagnosis of leprosy is crucial for preventing complications and interrupting transmission. Clinical examination, skin biopsy, and slit-skin smears are among the diagnostic tools. Recent advances include the use of Polymerase Chain Reaction

Correspondence to: Verna Asish, Department of Bacteriology, London Research Institute, The Francis Crick Institute, Lincoln's Inn Fields Laboratories, London, United Kingdom, E-mail: asish@ver.edu.in

Received: 31-Oct-2023, Manuscript No. MDTL-23-28356; **Editor assigned:** 02-Nov-2023, Pre QC No. MDTL-23-28356 (PQ); **Reviewed:** 16-Nov-2023, QC No. MDTL-23-28356; **Revised:** 23-Nov-2023, Manuscript No. MDTL-23-28356 (R); **Published:** 30-Nov-2023, DOI: 10.35248/2161-1068.23.13.403.

Citation: Asish V (2023) Unveiling Leprosy: Exploring the Depths of Antiquity Disease. *Mycobact Dis*. 13:403.

Copyright: © 2023 Asish V. 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.

(PCR) for detecting *M. leprae* DNA and point-of-care tests for field settings.

Multidrug Therapy (MDT) remains the cornerstone of leprosy treatment. MDT, introduced by the WHO in the 1980s, involves a combination of rifampicin, dapsone, and clofazimine. The duration of treatment depends on the clinical form of leprosy, ranging from six months to a year. The effectiveness of MDT in curing leprosy and preventing drug resistance has been a significant stride in the battle against the disease [6].

Challenges in leprosy elimination

Despite progress, challenges persist in the global effort to eliminate leprosy. Late detection of cases, persistent social stigma, and discrimination against affected individuals contribute to delayed care-seeking behavior. Incomplete understanding of the transmission dynamics hinders targeted interventions, and pockets of high endemicity persist in certain areas [7].

Stigma and discrimination

Leprosy has long been associated with stigma and discrimination, leading to the isolation and marginalization of affected individuals [8]. Societal beliefs about the contagiousness and incurability of the disease have fueled this stigma. Efforts to eliminate leprosy must include strategies to combat discrimination, raise awareness, and empower affected individuals to lead fulfilling lives [9].

Research and innovation

Continued research is essential for addressing gaps in our understanding of leprosy. This includes deciphering the complex interplay between *M. leprae* and the host immune response, developing more sensitive diagnostic tools, and exploring new treatment modalities. Research initiatives must be supported to pave the way for innovative approaches in the quest for leprosy elimination [10].

CONCLUSION

Leprosy, with its deep historical roots and persistent societal stigmas, remains a compelling public health challenge. The progress made in diagnosis, treatment, and global elimination efforts is commendable, but there is much work to be done. By dispelling myths, fostering early detection, and advocating for the rights of affected individuals, we can move closer to a world free from the burdens of leprosy. The journey towards leprosy elimination is not only a medical endeavor but a societal commitment to compassion, understanding, and inclusivity.

REFERENCES

1. Bennett BH, Parker DL, Robson M. Leprosy: Steps along the journey of eradication. *Public Health Rep.* 2008;123(2):198-205.
2. Dogra S, Narang T, Kumar B. Leprosy-evolution of the path to eradication. *Indian J Med Res.* 2013;137(1):01-15.
3. Rodrigues LC, Lockwood DN. Leprosy now: Epidemiology, progress, challenges, and research gaps. *Lancet Infect Dis.* 2011;11(6):464-470.
4. Naves MM, Patrocinio LG, Patrocinio JA, Naves Mota FM, de Souza AD, Fleury RN, et al. Contribution of nasal biopsy to leprosy diagnosis. *Am J Rhinol Allergy.* 2009;23(2):177-180.
5. Ghosh S, Chaudhuri S. Chronicles of gerhard-Henrik armauer hansen's life and work. *Indian J Dermatol.* 2015;60(3):219-221.
6. Hussain T. Leprosy and tuberculosis: An insight-review. *Crit Rev Microbiol.* 2007;33(1):15-66.
7. Fischer M. Leprosy-An overview of clinical features, diagnosis, and treatment. *J Dtsch Dermatol Ges.* 2017;15(8):801-827.
8. Pankhurst R. The history of leprosy in Ethiopia to 1935. *Med Hist.* 1984;28(1):57-72.
9. Turcotte R. Influence of route of *Mycobacterium lepraemurium* injection on susceptibility to mouse leprosy and on lymphoblastic transformation. *Infect Immun.* 1980;28(3):660-668.
10. Staples J. Disguise, revelation and copyright: Disassembling the South Indian leper. *Journal of the Royal Anthropological Institute.* 2003;9(2):295-315.