

Pathogens Can Cause an Infectious Disease in a Host

Karthigayan Gunalan*

Laboratory of Malaria and Vector Research, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, Maryland

*Corresponding author: Karthigayan Gunalan, Laboratory of Malaria and Vector Research, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville 20852, MD, E-mail: karthigayan.gunalan@nih.gov

Received date: May 03, 2021; Accepted date: May 20, 2021; Published date: May 31, 2021

Copyright: © 2021 Gunalan K, et al. 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.

SHORT COMMUNICATION

Opportunistic infection may be caused by microbes ordinarily in contact with the host, such as pathogenic bacteria or fungi in the gastrointestinal or the upper respiratory tract, and they may also result from (otherwise innocuous) microbes acquired from other hosts (as in *Clostridium difficile* colitis) or from the environment as a result of traumatic introduction (as in surgical wound infections or compound fractures). An opportunistic disease requires impairment of host defenses, which may occur as a result of genetic defects (such as Chronic granulomatous disease), exposure to antimicrobial drugs or immunosuppressive chemicals (as might occur following poisoning or cancer chemotherapy), exposure to ionizing radiation, or as a result of an infectious disease with immunosuppressive activity (such as with measles, malaria or HIV disease). Primary pathogens may also cause more severe disease in a host with depressed resistance than would normally occur in an immunosufficient host.

While a primary infection can practically be viewed as, the root cause of an individual's current health problem, a secondary infection is a sequela or complication of that root cause. For example, pulmonary tuberculosis is often a primary infection, but an infection that happened only because a burn or penetrating trauma (the root cause) allowed unusual access to deep tissues is a secondary infection. Primary pathogens often cause primary infection and also often cause secondary infection. Usually opportunistic infections are viewed as secondary infections (because immunodeficiency or injury was the predisposing factor).

Other types of infection consist of mixed, iatrogenic, nosocomial, and community-acquired infection. A mixed infection is an infection that is caused by two or more pathogens. An example of this is Appendicitis, which is caused by *Bacteroides fragilis* and *Escherichia coli*. The second is an iatrogenic infection. This type of infection is one that is transmitted from a health care worker to a patient. A nosocomial infection is also one that occurs in a health care setting. Nosocomial infections are those that are acquired during a hospital

stay. Lastly a community-acquired infection is one in which the infection is acquired from a whole community.

Infectious diseases are sometimes called contagious diseases when they are easily transmitted by contact with an ill person or their secretions. Thus, a contagious disease is a subset of infectious disease that is especially infective or easily transmitted. Other types of infectious, transmissible, or communicable diseases with more specialized routes of infection, such as vector transmission or sexual transmission, are usually not regarded and often do not require medical isolation of victims. However, this specialized connotation of the word contagious and contagious disease (easy transmissibility) is not always respected in popular use. Infectious diseases are commonly transmitted from person to person through direct contact. The types of contact are through person to person and droplet spread. Indirect contact such as airborne transmission, contaminated objects, food and drinking water, animal person contact, animal reservoirs, insect bites, and environmental reservoirs are another way infectious diseases are transmitted.

References

1. Gunalan K (2018). *Plasmodium vivax* infections of Duffy-negative erythrocytes: historically undetected or a recent adaptation?. *Trends Parasitol* 34: 420-429.
2. Miller LH (1976). The resistance factor to *Plasmodium vivax* in blacks. The Duffy-blood-group genotype, FyFy. *N Engl J Med* 295: 302-304.
3. Menard D (2010) *Plasmodium vivax* clinical malaria is commonly observed in Duffy-negative Malagasy people. *Proc Natl Acad Sci* 107: 5967-5971.
4. Lo E (2019) Frequent expansion of *Plasmodium vivax* Duffy Binding Protein in Ethiopia and its epidemiological significance. *PLoS Negl Trop Dis*.
5. Abdelraheem MH (2016) Transmission of *Plasmodium vivax* in Duffy-negative individuals in central Sudan. *Trans R Soc. Trop Med Hyg* 110: 258-260.