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Editorial

Editorial note on pathogenic bacteria

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EDITORIAL

Pathogenic bacteria are bacteria that can cause diseases. This article prime focus on the bacteria that is pathogenic to humans. Very species of bacteria are harmless and are often beneficial but others can cause infectious diseases. The number of these pathogenic divisions in human is estimated to be fewer than a hundred. By comparison, several thousand species are part of the gut flora present in the digestive tract.

The body is continually uncovered to many species of bacteria, including beneficial commensals, which grow on the skin and mucous membranes, and saprophytes, which increase mainly in the soil and in decaying matter. The blood and tissue fluids involve nutrients sufficient to sustain the growth of many bacteria [1]. The body has deferent mechanisms that enable it to resist microbial invasion of its tissues and give it a natural ordinary immunity or innate resistance against many microorganisms.

Pathogenic bacteria have evolved and are equipped with methods to overcome the body's natural defences, allowing them to penetrate areas of the body where bacteria are not ordinarily found, such as the bloodstream. Some infections only infect the epithelium, skin, or mucous membranes on the surface, while many others penetrate deeper, spreading through the tissues and distributing through the lymphatic and blood streams. A pathogenic germ can infect a healthy person in rare situations, but infection usually happens when the body's defence mechanisms are compromised by local trauma or an underlying debilitating condition, such as injury, intoxication, cold, exhaustion, or malnutrition [2]. In many circumstances, it's critical to distinguish between infection and colonisation, which occurs when germs cause disease.

The majority of pathogenic bacteria may be cultured and identified using Gram stain and other techniques. Bacteria produced in this manner are frequently examined to see whether drugs are helpful in treating the infection [3]. Koch's postulates are the gold standard for establishing a causal association between a germ and a disease for previously identified infections.

Once pathogens attach to host cells, they can cause direct damage as the pathogens use the host cell for nutrients and produce waste products. For example, Streptococcus mutants, a component of dental plaque, metabolize dietary sugar and produces acid as a waste product. Dental caries is caused by acid decalcifying the tooth surface. Normally, identification is accomplished by cultivating the organism in a variety of cultures for up to 48 hours. The growth is then detected visually or gnomically [4]. The cultured organism is then put through a series of tests to see how it reacts, which helps to identify the species and strain.

Antibiotics can be used to treat bacterial infections. Antibiotics are categorised as bactericidal if they kill bacteria or bacteriostatic if they only stop bacteria from growing. Antibiotics come in a variety of classes, each of which inhibits a different mechanism in the pathogen than in the host. Chloramphenicol and tetracycline, for example, block the bacterial ribosome but not the structurally different eukaryotic ribosome, demonstrating selective toxicity. Antibiotics are used to treat human sickness as well as to stimulate animal growth in intensive farming [5]. Both of these practices may be contributing to the rapid spread of antibiotic resistance among bacteria.

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