

Microbial diversity of human immunodeficiency virus infection

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Introduction

Infection is the irruption of the host by microorganisms, which also multiply in close association with the host's napkins. Infection is distinguished from complaint, a morbid process that doesn't inescapably involve infection (diabetes, for illustration, is a complaint with no given causative agent). Bacteria can beget a multitude of different infections, ranging in inflexibility from in apparent to blustering.

The capacity of a bacterium to beget complaint reflects its relative pathogenicity. On this base, bacteria can be organized into three major groups. When insulated from a case, foursquare or primary pathogens are considered to be probable agents of complaint (e.g., when the cause of diarrheal complaint is linked by the laboratory insulation of Salmonellas. from faces). Opportunistic pathogens are those insulated from cases whose host defense mechanisms have been compromised. They may be the agents of complaint (e.g., in cases who have been fitted to urinary tract infections with Escherichia coli by catheterization). Eventually, some bacteria, similar as Lactobacillus acidophilus, are considered to be no pathogens, because they infrequently or no way beget mortal complaint. Their categorization as no pathogens may change, still, because of the rigidity of bacteria and the mischievous effect of ultramodern radiation remedy, chemotherapy, and immunotherapy on resistance mechanisms. In fact, some bacteria preliminarily considered to be no pathogens are now known to beget complaint. Serratia marcescens, for illustration, is a common soil bacterium that causes pneumonia, urinary tract infections, and bacteremia in compromised hosts.

Acridity is the measure of the pathogenicity of an organism. The degree of acridity is related directly to the capability of the organism to beget complaint despite host resistance mechanisms; it's affected by multitudinous variables similar as the number of infecting bacteria, route of entry into the body, specific and nonspecific host defense mechanisms, and acridity factors of the bacterium. Acridity can be measured experimentally by determining the number of bacteria needed causing beast death, illness, or lesions in a defined period after the bacteria are administered by a designated route. Accordingly, computations of a murderous cure affecting 50 percent of a population of creatures (LD50) or an effective cure causing a complaint symptom in 50 percent of a population of creatures (ED50) are useful in comparing the relative acridity of different bacteria.

Pathogenesis refers both to the medium of infection and to the medium by which complaint develops. The purpose of this chapter is to give an overview of the numerous bacterial acridity factors and, where possible, to indicate how they interact with host defense mechanisms and to describe their part in the pathogenesis of complaint. It should be understood that the pathogenic mechanisms of numerous bacterial conditions are inadequately understood, while those of others have been probed at the molecular position. The relative significance of a contagious complaint to the health of humans and creatures doesn't always coincide with the depth of our understanding of its pathogenesis. This information is stylish acquired by reading each of the preceding chapters on specific bacterial conditions, contagious complaint textbooks, and public health bulletins.

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