Editorial

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Editorial Note on Immune-mediated Organ Pathology

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Editorial Note

Invasion of microbes induces host defensive reactions in order to eradicate infection. Bacterial components such as lipopolysaccharides, peptidoglycan, and nucleic acid, as well as viral components such as viral coat proteins and nucleic acid, can stimulate innate and adaptive immunity and, if immune responses are excessive, can disrupt the host's immunological homeostasis. These immune responses may collectively cause the death of host cells or organ damage, resulting in a variety of organ pathologies and the emergence of immunity-mediated illnesses. Furthermore, several microbial components have chemical similarities to host molecules, which might lead to molecular mimicry. Pathogen-induced autoimmune disorders are thought to be caused through molecular mimicry.

Blood filtration is a vital physiological function for a mammal's life, and it occurs in the kidney, a specialized organ. Glomerulonephritis is a disease in which the kidney's function is impaired, causing fluid, electrolytes, and metabolic waste to build up in the body, affecting critical parameters and other essential organs. Microbial or parasite infection can induce glomerulonephritis. It can also happen as a result of an autoimmune illness, such as systemic lupus erythematous, or a tumor. The Group A streptococcus, *Streptococcus pyogenes* causes immune-mediated Acute Post-Streptococcal Glomerulonephritis (APSGN).

Oral health is crucial not only for chewing and biting food, but also for the pathogenesis of a variety of infectious and noninfectious illnesses. Tooth decay, gum disease, and oral cancer are among oral/dental illnesses that can lead to other systemic diseases. These illnesses can spread from the mouth to various organs, or by the transmission of microbial poisons or their components, or through the emergence of systemic inflammatory responses.

Microbes may be found in abundance in the human body, notably in the skin, stomach, urogenital tract, and upper respiratory tract. These bacteria dwell in the intestinal lumen of a healthy host and are unable to reach organs such as the spleen, liver, and other important organs. The Gut Vascular Barrier (GVB) is a novel idea that has just developed. Non-pathogenic gut bacteria halt in the lumen, but pathogenic microbes breach the GVB and gain contact to organs, causing illness.

Infants and young children up to the age of two years are often affected by viral bronchiolitis, a lung illness caused by the respiratory syncytial virus. Viral bronchiolitis is an acute respiratory infection that starts in the upper respiratory tract and then spreads to the lower respiratory tract, causing severe inflammation and mucus production. A runny or stuffy nose, trouble breathing, coughing, and a low-grade fever are all symptoms of viral bronchiolitis in children. Additionally, this illness has the potential to spread to the ear, resulting in an ear infection.

