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Probiotics as immune modulators in prevention of intestinal infection

Use of probiotics may induce a barrier influence against common pathogens and antigens by activating macrophages, altering cytokines, increasing natural killer cell activity and/or increasing levels of immunoglobulins. Recognition of in vivo and immunomodulatory roles of probiotic bacteria is now promoting opportunities for use of these microorganisms in many fields e.g., inflammation, infection and atopy. The survival issues of probiotics are associated with their establishment in the competitive gut ecosystem. Since the generation of immunophysiological regulation in the gut depends on the establishment of indigenous microflora and on the therapeutic interventions based on the consumption of cultures of beneficial live microorganisms that act as probiotics. One of possible mechanisms of probiotics is promotion of a nonimmunologic gut defence barrier, which includes the normalization of increased intestinal permeability (dysbiosis) and gut microecology. The role and effect of probiotics in infant feeding, on the mucosal permeability and microbial flora composition and in turn on the stabilization of Th1/Th2 & IgE production has been tested. Another possible mechanism of probiotics is improvement of the intestine's immunologic barrier, particularly through intestinal immunoglobulin, alleviation of intestinal inflammatory reaction that promotes a gut-stabilizing effect. Many probiotics effects are mediated through immune regulation, particularly through balance control of proinflammatory and anti-inflammatory cytokines. So, probiotics can be used as innovative tools to alleviate intestinal inflammation, normalize gut mucosal dysfunction and down-regulate hypersensitivity reactions. There are differences that exist in the immunomodulatory effects of candidate probiotics bacteria. Specific immunomodulatory properties of probiotics bacteria should be characterized when developing clinical applications for extended target populations.

Biography

Aziz Koleilat is currently working as a Vice General Secretary, Pashan Pan Arab Society Pediatric Gastroenterology Hepatology and Senior Pediatric Consultant Gastroenterology and also Asthma IBR Member Makassed General Hospital, Lebanon.