

Infant Immune Response and Microbiome: Do we Recognize the Role of the Microbial Flora?

Aziz Koleilat*

Department of Pediatrics, Makassed University General Hospital, Lebanon

***Corresponding Author:** Aziz Koleilat, Department of Pediatrics, Makassed University General Hospital, Lebanon.

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The gut microbiome, the trillions of microbes that colonize the gut of an individual, strongly influences both health and disease.

Our microflora performs important functions such as facilitating digestion, generating needed nutrients through microbial metabolic activities, mediating brain-gut communication, modulating host immune responses, and harvesting energy from food [1].

Host-bacteria interactions affect normal physiology and may induce susceptibility to disease; thereby disrupting the symbiosis between microbiota and host (dysbiosis) which may have profound adverse effects [2].

An alteration in the balance between harmful and beneficial bacteria was associated with several disorders such as irritable bowel syndrome, inflammatory bowel disease, malnutrition, obesity and liver diseases [3].

An increasing understanding of the link between compositional and functional changes of the microbiota led to innovative diagnostic techniques and development of novel therapies. Because an altered intestinal microbiota dysbiosis has been implicated in the generation of symptoms in many infectious or autoimmune and even allergic diseases, replacement or restoration of the microflora via fecal microbiota transplantation (FMT) has been hypothesized to have a positive effect in affected patients and many studies have addressed this issue. Manipulation of the microflora via FMT or probiotics was shown to be beneficial in many gastrointestinal diseases [4].

Use of probiotics, what is named as designer probiotic, tailored to the need of the disease, was associated with a significant improvement of the course of the disease which is designed for [5].

Are there possibilities to use designer probiotics or fecal transplant to interfere in The Gut Microbiota Functions In various fields like Neurologic, Psychiatric, Respiratory, Cardiovascular, Gastrointestinal, Hepatic, Metabolic, Oncologic directly or indirectly.

Can we influence the immune maturation and homeostasis, and regulation metabolism? [6,7].

We have to admit that this organ is a major player in our health and disease.

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