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Health, nutrition/metabolic syndrome (diabetes) and intestinal microbiota, immunity and vaccine?

Ivana Haluskova Balter

Scientific and medical advisor, Clinical/ Medical practise, France

Abstract

Around 415 million people around the world have diabetes (9% of adults), and the vast majority live in low- and middle-income countries. Over the next decade, this number is predicted to increase to 643 million people. Given that diabetes is a major cause of mortality, morbidity, and health care expenditures, addressing this chronic disease represents one of the greatest global health challenges of our time. Type 3 diabetes (which makes up 87-91% of the total diabetes burden), both in terms of prevalence and incidence and prediabetic metabolic syndrome malnutrition (hunger) and astonishing, with obesity which represent risk factor of adapted host responses and predisposition for several infectious and non-infectious diseases are still on the list of Public health issues. By the way given immune mediated link clear risk factor for COVID 19 identified by several studies (eg Discovery in Europe).

Microbiota under 3 years old fluctuates and is more impressionable to environmental factors than the adult microbiota. Lifestyle where nutrition plays one of key factors along with sanitization, caesarean sections, inappropriate antibiotic usage, immunizations. There are several paediatric diseases associated with alterations of the intestinal microbiota like Atopy and Asthma, Obesity, Diabetes, Inflammatory bowel diseases and Neurodegenerative diseases. There is a raising evidence concerning infectious and tropical disease microbiota immune mediated response. Breastfeeding, introduction of solid food, regional lifestyle and diet (geography) are factors influencing gut microbiota. Regardless of the origin of gut associated commensals, a number of studies have attempted to identify the mechanism by which breastfeeding promotes overall immune health via entero- mammary pathway. Early life changes in microbiota composition can alter susceptibility to developing obesity later in life. Many studies shown presence/absence of specific microbes can modulate and program life-long changes in immunity and further clinical study might help understand exact paths on metabolic disease progression.

Research showed that impact of diet and environmental change stresses on the host can be passed on maternally to children through epigenetic modulation of the DNA by methylation. Thus, maternal dietary and microbial exposures are also crucial to the development of the microbiota early in life as children may inherit genes with differing potential for predisposition for malnutrition or obesity, based on the diet of their mother.

Biography

Ivana Haluskova Balter, MD, France Scientific and medical advisor, Partnership Science and Research for Health & Preventive medicine French Medical professional specialised in infectious and Tropical (Neglected) diseases, Internal medicine, certified in Immunology, Pediatry and Public health and diplomacy in Switzerland (IHEID), Vaccines and years of Clinical/Medical practise. Lived multi-country medical "field" experience in Southeast Asia, West/Central/East Europe and Middle East. Speaking French, English, Italian, Russian, Czech/Slovak. Over 13 years of experience as advisor and senior medical lead in pharmaceutical research and development for European and USA companies within various therapeutic covering complex international projects. Active member academia (World alliance against antibiotic resistance and French immunology society administrative boards) and speaker at various international congresses. Supporting research and cooperation around Microbiota/Immunity. Focus on better understanding of host immune system - pathogen-microbiota interactions for adapted diagnostic, prevention and interventions Fostering research to tackle current issue of "resistance" to treatment (antivirals, antiinfectives, antiparasitic drugs) integratiing surveillance data and population variabilities(genetics, immunology and microbiology).

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