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Are we any close to unraveling the mechanism of interactions among susceptibility genes towards Type 1 Diabetes, Gut microbiota along with environmental factors, specifically early diet patterns –A systematic review

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Earlier we had reviewed on the aetiopathogenesis of Type 1 diabetes mellitus (T1D) along with role of gut microbiota (GM), genes, immune therapies besides the role of GM in obesity, type 2 diabetes and probiotics in detail. Whereas the pathogens for autoimmune diseases continue to be mostly not clear, genetic proneness as well as environmental factors have been believed to be the main etiologies of the environmental factors the, microbiome is associated with autoimmune diseases through direct as well as indirect crosstalk with innate as well as adaptive immune cells. This leads to loss of immune tolerance, chronic inflammation as well as immune response against host tissues. The posited parts of microbiome in autoimmunity are Molecular mimicry, epitope spreading, bystander activation, as well as continued infection. Further the longitudinal studies have pointed toward the implication of geographical variations .Here we decided to conduct a systematic review on the role of gut microbiota and its relation with Type 1 diabetes mellitus, interaction with other environmental factors like delivery mode ,mode of baby feeding and its impact on GM like use of breast feeding only at least till 4 months ,Ultimately it has been observed that delaying gluten introduction till 4mths as well as cows milk beyond 12mths of age along with addition of early pre/probiotics in those children possessing high risk susceptibility genes. More work is required to evaluate gut virome and other components like archeome; Microbiota of vagina, skin as well as metabolome to arrive at a conclusion .Moreover use of diets like Mediterranean diet, FUN2 as well as ArH targeting to avoid generation of T1D needs to be exploited.

Key Words: gutmicrobiota (GM), Type 1 diabetes mellitus (T1D), probiotics, vaginal delivery, breast feeding

Recent Publications

1. Kulvinder Kochar Kaur,Allahbadia GN,Singh M. Attempting Getting Insulin Independent Immunotherapies in Type 1 Diabetes Mellitus (T1D) in the Pre Stage 1 (BeforeIslet Autoantibodies)". Acta Scientific Paediatrics 2020;3(6): 01-04.

2. Kulvinder Kochar Kaur,Allahbadia GN,Singh M. The association of dietary fatty acids and gut microbiota alterations in the development of neuropsychiatric diseases: A systematic review. Obes Res Open J. 2020; 7(1): 19-45.

3. Kulvinder Kochar Kaur,Allahbadia GN,Singh M.. Have Probiotics and Synbiotics passed the test of time to be implemented in management of obesity and related metabolic disorders-a comprehensive review. Adv Obes Weight Manag Control. 2019;9(1):21–28.

Biography

Kulvinder Kochar Kaur is the scientific director of Dr. Kulvinder Kaur Centre for human reproduction, Jalandhar, Punjab, India, where she manages the complicated cases of infertility. She graduated from LHMC Delhi in 1980 topping in medicine in all 3 medical colleges thereby getting the Dr. Devi Chand Gold medal from the late PM Smt. Indira Gandhi & also topped in all the MBBS subjects prior to that EG, anatomy, pathology, biochem, etc., making her basics sound & later she managed the endocrine clinic in PGI Chandigarh during her MD days. Following that she reported the 40th world case hydrometrocolpos working in Saudi Arabia & has been working in the field of neuroendocrinology of obesity. GnRH control along with the role of kisspeptins, prokineticins in human reproduction, AIDS & Cancer –during this period she managed to successfully treat the first case of non-gestational choriocarcinoma of the uterine body in a young girl medically thereby preserving her fertility-the first case in world literature of its kind. Further she has over 300 publications mostly international in her name.

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