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CD4⁺CD25⁺ cells in Type 1 diabetic patients with other autoimmune manifestations

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Type 1 Diabetes Mellitus is the most common metabolic disease of childhood; it is a T-cell mediated autoimmune disease. The existence of multiple autoimmune disorders in diabetics may indicate underlying primary defects of immune regulation. Diabetes Mellitus is one of the presentations of Primary Immune Deficiency as Immune dysregulation Polyendocrinopathy Enteropathy X-linked (IPEX), IPEX-Like syndromes and Common Variable Immune Deficiency (CVID). Twenty two cases with Type 1 Diabetes associated with other autoimmune disease were recruited from the Diabetic Endocrine and Metabolic Paediatric Unit (DEMPU), Cairo University along with twenty one normal subjects matched for age and sex as a control group. Their anthropometric measurements, diabetic profiles and glycemic control were recorded. Laboratory investigations included complete blood picture, glycosylated hemoglobin, antithyroid antibodies, celiac antibody panel and inflammatory bowel disease markers when indicated. Flow cytometric analysis of T-cell subpopulation was performed using anti-CD3, anti-CD4, anti-CD8 and anti CD25 monoclonal antibodies. Three cases revealed values of CD4⁺ CD25 below 0.1% and one case had zero counts. However, this did not mount to a significant statistical difference between the case and control groups neither in percentage nor absolute numbers. Significant statistical differences were observed between the case and the control groups regarding their height, weight centiles, as well as hemoglobin percentage, white cell counts and the absolute lymphocytic counts. Derangements of CD4⁺ CD25 cells may exist among diabetic children with multiple autoimmune manifestations indicating defects of immune controllers. However quantitative flow cytometric analysis may not be sufficient for complete T regulatory cell assays regularly.

Biography

Mona Hafez has completed her MD from Cairo University. She is the head of Diabetes Endocrine Metabolic Paediatric Unit (DEMPU) Children Hospital Cairo University. She is the assistant general secretary of The Egyptian Society for Paediatric endocrinology and Diabetes. She is a member of European Society of Paediatric Endocrinology (ESPE) and a member of International Society for Paediatric and Adolescent Diabetes (ISPAD). She shared in the performance of Egyptian Growth Charts and the establishment of Neonatal Thyroid Screening Program in Egypt. She has published more than 25 papers in reputed journals.

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