



Regulatory T cells in children with recently diagnosed type 1 diabetes

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Abstract:

Background: Regulatory T cells have an important role in the control of immune reactivity against self antigens and probably play a role in pathogenesis of type 1 diabetes (T1D). We aimed to determine the frequency of regulatory T cells in recently diagnosed children with/T1D. **Materials and Methods:** 20 children with/T1D and 20 healthy children of matched age and sex as controls were enrolled in this study. All cases were subjected to a thorough history taking, full clinical examinations and investigations which include; insulin C peptide levels and flow cytometric detection of B-, T-lymphocytes and regulatory T cells. **Results:** Insulin C peptide level was significantly lower in children with/ T1D compared with controls. The percentages of B and T-lymphocytes were not significantly different between patients and controls. The percentages of CD4+CD25+High and CD4+CD25+High Foxp3+ cells both in total lymphocytes and in CD4+ lymphocytes were significantly decreased in patients than controls, while the percentages of total CD4+CD25+ and CD4+CD25+Intermediate both in total lymphocytes and in CD4+ lymphocytes were not significantly different between patients and controls. The geometric mean of fluorescence intensity (MFI) of Foxp3+ expression in CD4+CD25+High cells was significantly decreased in patients than controls. Positive correlations were observed between both age and insulin C peptide and frequency of CD4+CD25+High Foxp3. **Conclusion:** The percentage of regulatory T cells; CD4+CD25+High Foxp3 was decreased in children with recent T1D and may have a role in its pathogenesis. Their role as a prognostic significance and their relation to various complications should be explored.

Keywords:

Insulin C peptide, regulatory T cell, type 1 diabetes

Published In:

Indian J Endocrinol Metab. , Vol. 16 - No.6 , pp. 952 - 957