CASE REPORT: DE NOVO MUTATION OF FOXP3 CAUSING MILD PHENOTYPE OF IMMUNODYSREGULATION, POLYENDOCRINOPATHY, ENTEROPATHY, X-LINK SYNDROME

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Poster Number: P3-P099

INTRODUCTION

• Immune dysregulation-polyendocrinopathy-enteropathy-X-linked syndrome (IPEX) is caused by mutations in the gene for the transcription factor FOXP3. The phenotype of IPEX was first described in 1982, and the first genetic mutations in FOXP3 were identified in 2000. FOXP3 is required for the differentiation and function of CD4+CD25+ T regulatory cells.
• IPEX is rare, often fatal. However, several cases present later onset, mild forms, or less common clinical manifestations.

CASE REPORT

• A male preterm baby was admitted at 8 day-old for diabetic ketoacidosis and sepsis. He was born at 36 weeks with a low birthweight 2200gr.
• There was no significant family medical history.
• At 4 month-old, he developed a dermatitis without recurrence. High IgE level at 700 µg/l was found. Anti-RNP was positive. Absence of other clinical manifestations in this patient.
• There wasn’t any autoantibodies related to his diabetes. His diabetes has been well controlled with. The last HbA1c was 7.3% at 12 months.
• The DNA analysis found de novo missense mutation at exon 12 of FOXP3 gene c.1190G>A, p.(Arg397Gln).

DISCUSSION

• Clinical manifestations of FOXP3 mutations are variable symptoms and severity. Classically, FOXP3 mutations have been described as a severe panorama with intractable diarrhea, diabetes mellitus, eczema. However, some manifestations were absent in some reports. Our patient has isolated neonatal diabetes.
• However, the same genotype c.1190G>A was found by Tsuda et al with a whole manifestation described above.
• Some study suggested milder IPEX syndrome do not abrogate the function of forkhead domain. However in this case, we found missense mutation in FKH domain.

CONCLUSION

• FOXP3 is one of the gene mutations causing early onset insulin-dependent diabetes.
• Prognosis of FOXP3 mutations is challenging because there is no clear correlation between genotype and phenotype in patient with IPEX syndrome.

REFERENCES