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ANALYSIS OF CHOSEN POLYMORPHISMS RS2476601 A/G - PTPN22, RS20541 A/G – IL13, RS29941 A/G – KCTD15 IN PATHOGENESIS OF TYPE 1 DIABETES IN CHILDREN

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Background: Type 1 Diabetes is multifactorial disease with a genetic susceptibility and environmental factors. The Tyrosine phosphatase non-receptor type 22 (PTPN22) gene polymorphism is known to be associated with T1DM, but it has not been established in a Caucasian children population yet. The interleukin 13 (IL13) and the potassium chanel tetramerization domain containing 15 (KCTD15) gene polymorphisms impact on the development of Type 1 DM in children has not been reported yet.

Objective & hypothesis: To estimate the association of polymorphisms of PTPN22, IL13 genes and KCTD15 polymorphisms with the predisposition to T1DM in children.

Method: The study was performed in 94 patients with T1DM. The three single nucleotide polymorphisms (SNPs): rs2476601 - PTPN22, rs20541- IL13 , rs29941 -KCTD15 were genotyped by TaqMan SNP genotyping assay using the real-time PCR.

Results: Rs2476601 A alleles were more frequent in patients with T1DM in comparison to healthy subjects (p=0.004 with OR=2). Rs20541 A alleles were more frequent in T1DM patients in comparison to healthy subjects (p=0.002 with OR=2). Rs29941 A alleles were more frequent in T1DM patients in comparison to healthy subjects (p=0.001, OR=7).

Conclusion: Rs2476601 A/G - PTPN22, rs20541 A/G - IL13 , rs29941 A/G - KCTD15 polymorphisms could contribute to development of T1DM in children. The main risk factor for rs2476601, rs20541 and rs29941 is allele A.

Biography

Artur Bossowski had completed his PhD from Medical University in Bialystok. He is Head of Department of Pediatrics, Endocrinology, Diabetology with Cardiology Division, Medical University of Białystok. He is honorary consultant of pediatric endocrinology and diabetology. He has published more than 101 articles and 160 healthy papers in reputed journals in area of pediatrics endocrinology, diabetology and immunogenetics. He cooperates with many endocrine and diabetes centers in Poland and in London (Royal London Hospital, FIRS Lab, Lanishen, Cardiff UK, Thyroid Molecular Centers in Meinz, Germany, Department Of Pediatrics Endocrinology, Messyna Medical University in Italy).

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