(FC-08)

Hyperinsulinemic Hypoglycemia Due to Homozygous C.706 C>T (P. R236X) Mutation in 3 Siblings: Presentation with Resistant Epilepsy

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Hyperinsulinemic hypoglycemia (HH) is the most common cause of severe resistant hypoglycemia in newborn, infancy, and childhood period. Diazoxide is the mainstay of medical therapy in HH. In about half of patients, HH is diazoxide-unresponsive. Mutations in *HADH* gene cause diazoxide-responsive and protein-sensitive HH. Although *HADH* mutations can present with severe neonatal hypoglycemia, they usually present at infancy and childhood period with relatively mild hypoglycemia. A 17-year-old male patient with the diagnosis of core triatriatum was admitted to our pediatric cardiology department for cardiac catheterization. He had epilepsy and neuro-developmental delay and was on triple-antiepileptic therapy. During his hospitalization period, one of his sisters developed generalized tonic-clonic seizure. Blood glucose level measured was 32 mg/dL with a simultaneous insulin level of 28.8 mIU/mL and C-peptide of 2.8 ng/mL. Urine ketone test was negative. Further evaluation of our patient revealed hypoglycemia with serum insulin level of 22.2 mIU/mL and C-peptide of 2.4 ng/mL. A diagnosis of HH was considered. Parents were second cousins. Another female patient also suffered from epileptic seizures-like episodes. Two sisters had died at 3-month-old and 1-year-old. Molecular genetics analysis revealed homozygous nonsense, c.706C > T(p.R236X) mutation in exon-6 of *HADH* gene. Parents were heterozygous. Diazoxide therapy was commenced for the siblings with homozygous mutation. The frequency of epileptic seizures in patient on antiepileptic therapy was decreased, while other siblings remained free of seizure during follow-up. We had planned to perform a protein loading test. In conclusion, since HH due to *HADH* gene mutations can present during childhood period, it should be kept in mind in the differential diagnosis of resistant epilepsy, particularly in consanguineous pedigrees.

(FC-09)

Investigation of *LDLR* Gene Mutations in Turkish Patients with Familial Hypercholesterolemia

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Familial hypercholesterolemia (FH) is characterized by severely elevated LDL cholesterol (LDL-C) levels that lead to an increased risk for cardiovascular disease. An estimated 70%-95% of FH results from a heterozygous pathogenic variant in one of three genes *(APOB, LDLR, PCSK9)*. Many people have mutations in the *LDLR (low-density lipoprotein receptor)* gene that encodes the LDL receptor protein, which normally removes LDL from the circulation. The aim of our study was to examine the genetic background of Turkish patients suspected of FH.

In this study, we characterize the spectrum of mutations causing FH in 40 Turkish probands suspected to have FH. Next-generation sequencing was performed in all subjects for *LDLR* gene.

A total of 25 mutations in the *LDLR* gene were detected in 40 subjects. For the patients who did not have a mutation in *LDLR* gene, sequencing analysis for APOB and PCSK9 has been performed.

FH diagnosis was achieved with a high success rate by using a combination of clinical criteria and targeted next-generation sequencing.

(FC-10)

A Novel *THRA* Gene Mutation in Patient with Thyroid Hormone Resistance

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Thyroid receptor alpha (THRA) gene mutation causes thyroid hormone resistance syndrome characterized by near normal thyroid function tests and tissue-specific hypothyroidism.

Case: A 4-year-old male patient was admitted with short stature, motor-mental retardation, and constipation. Motor-mental retardation has been assessed at the age of one year and no etiologic cause was found. In past medical history, he was born at 38 weeks gestational age with a birth weight of 2900 g. His motor-mental milestones were delayed. He had transient