Maturity Onset Diabetes of Youth (MODY) in a patient with VATER syndrome

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Introduction

- VATER syndrome is a rare, usually sporadic, entity, including ≥2 of the following: vertebral defects (V), anal atresia (A), tracheoesophegeal fistula, esophageal atresia (TE) and radial or renal dysplasia (R).
- Maturity Onset Diabetes of Youth (MODY) is a usually non-insulin-dependent type of monogenic diabetes mellitus (DM), usually in adults <25 years, with autosomal dominant inheritance, without the features of metabolic syndrome.

Case report

At admission:

A 25-year-old Caucasian male with VATER syndrome was admitted to our department due to newly diagnosed DM on occasion of polydepsia and polyuria, without ketoacidosis [fasting plasma glucose (FPG) levels: 355 mg/dl, glycosylated hemoglobin (HbA1c): 12.6%].

Medical history and physical examination:

Clinical examination was remarkable for a low body mass index (18.28 kg/m^2), muscular weakness of the extremities and hearing loss.

His family history was positive for non-insulin dependent DM (diagnosed at 35 years, without the classical features of metabolic syndrome).

Laboratory findings:

Investigation for autoantibodies to glutamic acid decarboxylase (GAD), insulin, islet cells and tyrosine phosphatase (IA2) was negative.

During an oral-glucose-tolerance-test (OGTT), FPG, fasting insulin and C-peptide levels at baseline were: 150 mg/dl, 2 mIU/ml (normal: 6-27) and 1.07 ng/ml (normal: 0.9-7.1), and 2h after glucose 75 g: 256 mg/dl, 11.7 mIU/ml and 3.38 ng/ml, respectively.

Management and patient's clinical course:

He was treated with glimepiride 2 mg/day. At 3 months, HbA1c fell to 5.9%.

He remained on glimepiride for 1 year, when due to glucose control deterioration, insulin was started.

He fulfils the ***5 criteria of MODY:***

i. early-age newly DM with normal insulin and C-peptide levels
ii. positive family history for DM
iii. >90 mg/dl increase in plasma glucose during OGTT
iv. glycosuria with relatively normal FPG
v. responsiveness to sulfonylureas

Genetic analysis for MODY 3 (the most common) was negative. Further testing to rule out mitochondrial diabetes is under way.

Conclusions

This is the first case reporting the co-existence of MODY with VATER syndrome.

The exact pathogenetic mechanisms linking these entities are currently unknown.

References

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