A NOVEL MUTATION IN THE TTF-1 GENE IN A CHILD WITH BENIGN HEREDITARY CHOREA
Patianna V. D.¹, Predieri B.¹, Fusco C.², Garavelli L.³, Iughetti L.¹
¹ Department of Medical and Surgical Sciences for Mothers, Children and Adults, University of Modena and Reggio Emilia, Modena; ² Departments of Pediatrics and Gynecology, ASMN, Reggio Emilia; ³ Clinical Genetics Unit, ASMN, Reggio Emilia; Italy

INTRODUCTION
✓ Benign hereditary chorea (BHC) is a rare autosomal dominant disorder described as a non-progressive chorea of early onset
✓ Clinical manifestations of BHC can be single neurologic disorder (13%), brain and thyroid diseases (30%), or "brain-lung-thyroid syndrome" including neurological disorders, thyroid dysfunction and neonatal respiratory distress syndrome (50%) (Fig. 1).

CASE REPORT
✓ XY, 18 months–old, was admitted to the Pediatric outpatient clinic because of motor delay and gait disorder
✓ He was the second son of healthy and non-consanguineous parents. Family history was uneventful
✓ Perinatal history was unremarkable for pulmonary problems and screening test for congenital hypothyroidism was normal

Clinical Findings
✓ He had short stature (-1.99 SDS), normal weight (BMI 19.4 kg/m²), without significant dysmorphic features
✓ Neurological evaluation showed hypotonic and joint laxity, axial dystonia and choreic movements

Laboratory and instrumental data
✓ No inherited metabolic disease was shown, array-CGH were normal, and IGF–1 levels (35 ng/ml) were at the normal lower range
✓ Thyroid function evaluation was suggestive of subclinical hypothyroidism (TSH 8.46 μIU/ml and fT4 11.1 pg/ml)
✓ Brain MRI showed mild abnormalities in peripheral regions, a large cistern and hippocampus' dysmorphisms

Neurological signs associated to thyroid dysfunction led us to hypothesize BHC

The thyroid transcription factor 1 gene (TTF-1, cr.14q13.3.) molecular test identified a heterozygous substitution (Pro291Arg)

CONCLUSIONS
✓ The TTF-1 gene is essential for the organogenesis of lungs (Fig. 2), thyroid, and development of the basal ganglia
✓ Genotype/phenotype association can be extremely variable because of many clinical features of the disease
✓ Thyroid dysfunction associated with hypotonia and choreic jerks induced to suspect this rare condition
✓ Our clinical case is peculiar because of a “de novo” mutation and choreic jerks were subtle and were not the main clinical feature

Authors have nothing to disclose