

Poster Abstract: Clinical

First Case of Late-Onset Glycogen Storage Disease Type II in Russia with a Novel Mutation

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The classification of Pompe disease, an autosomal recessive disorder resulting from a deficiency of acid α -glucosidase (GAA, or acid maltase), includes two main forms – infantile- and late-onset glycogen storage disease type II (GSD II). Despite the age of onset and different life prognosis, Pompe disease is a single disease continuum with variable rates of disease progression and different ages of onset. The late-onset form of Pompe disease (LOPD) is a well-known milder form of the GSD II.

A 66-years-old man with difficulties climbing stairs and walking (6MWT less than 10 m), breathing problems, particularly at night when lying down, and abnormal spinal lordosis is described here. The initial signs of the disease were subtle and unrecognized for more than 30 years: inability to whistle since childhood, difficulties in running long distances, pull-ups and chin-ups, playing running games while being in the army, shortness of breath since age 40 years and periodical general inexplicable fatigue since 45 years; myopathic symptoms, such as force decrease of the hips, pelvic, and trunk muscles, proximal leg muscle atrophy and progressive course of motor disturbances became obvious at age 50 and the patient was classified as having ‘limb–girdle muscular dystrophy of late

onset’, the delay in diagnosis was 16 years. Laboratory studies revealed elevated CK of 406 IU/L and ALT of 46 IU/L. ECG and EchoCG were normal; normal values of motor and sensory nerves ENG; needle EMG revealed myopathic MUPs in the proximal and trunk muscles with spontaneous activity (FP, PSW, and myotonic discharges in paraspinal and biceps of the arm). Leukocyte acid α -D-glucosidase activity 5.8 nM/mg/h (reference: 13.00–53.60). The patient has typical clinical and laboratory changes of LOPD with proximal muscular weakness and respiratory insufficiency without cardiac complications. Molecular DNA analysis revealed two compound heterozygous mutations: c.743T>C (pLe248Pro), described in HGMD database (CMO82746), and novel mutation c.2799+4A>G (pathogenicity of this mutation requires further investigation).

The remaining four patients diagnosed with LOPD in Russia (mean diagnostic delay of 12 years) have known mutations in comparison with this first described case. The patient has just started enzyme replacement therapy with infusions of recombinant human acid- α -glucosidase (rhGAA; 20 mg/kg body weight) with a slight positive effect which should be assessed in detail in the near future.

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