interventricular septum of 18.0 mm (IQR: 15.0–21.0) and ventricular mass index of 154.5 g/m^2 (IQR: 130.0–190.0). Furthermore, the E/E′ relationship was 14.5 (IQR: 11.2–22.7). Patients with CH I (n = 14) showed mild affection in their MSSI and EQ-5D scores (VAS = 62.3 ± 2.4), mostly due to the LVH. Typical FD symptoms were found: tingling in hand and feet (50%), shortness of breath, constipation, fatigue (42.9%), pain in joints (35.7%) or chest pain (28.6%), among others. Only one subject showed a classical missense mutation in FD. Clinical records in patients with CH I confirmed that these patients suffered from classic symptoms of FD. Further studies on those patients could clarify if this haplotype is linked with FD.

Table 1
GLA gene variants.

***GLA* gene variants**	**n**
c.-125 t>g	1
c.-34 c>t	1
c.-30 g>a	4
c.192 C>T (p.I64=)	1
c.194+17 A>G	1
C.640-25 A>G	1
c.937 G>T (p.D313Y)	4
c.-10 c>t & c.1000-22 C>T	1
CH I [1] (-10 c>t, c.376-81_77 del5, c.640-16 A>G, c.1000-22 C>T)	15
CH II (c.376-81_77 del5, c.640-16 A>G, c.1000-22 C>T)	17
CH III (c.-12 g>a, c.548-125 C>G, c.639+68 A>G, c.1000-22 C>T)	15
CH II + CH III	1

[1]CH I also includes subjects with combinations with missense mutations p.D313Y (n = 1), p.D315 = (n = 1), p.S126G (n = 1) as well as CH II (n = 2) and III (n = 1).

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A study of intrathecal enzyme replacement for cognitive decline in mucopolysaccharidosis I

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Patients with attenuated MPS I have been found to suffer from progressive decline in memory and intelligence which is inadequately treated with intravenous enzyme replacement therapy (ERT). This ongoing study investigates intrathecal (IT) ERT with recombinant human α-L iduronidase (formulated as laronidase) as a treatment for cognitive decline. This study is a twenty-four month open label prospective randomized study in 16 MPS I patients age 6 or older with intellectual impairment or functional decrease over time. Subjects receive baseline neuropsychological, clinical, radiological, and biochemical evaluations and then are monitored for change in these parameters during first monthly, then quarterly IT ERT. The study randomizes subjects to a treatment and a control group for 12 months, and then all subjects receive treatment on a 12-month open-label continuation. Nine subjects have enrolled and eight have received treatment (some after a 12 month non-treatment control period). Adverse events possibly related to IT ERT include low back pain, groin pain, neck stiffness, headache, and transient blurry vision. The only serious adverse event possibly related to treatment is a headache that required an extra hospital day of monitoring after treatment. Further study is needed to determine whether IT ERT can be used to treat cognitive decline in MPS I patients who do not qualify for and/or are unable to have hematopoietic stem cell transplantation. This study is funded by the Lysosomal Disease Network (NIH/NINDS #U54NS065768), UCLA Clinical and Translational Science Institute at Harbor-UCLA Medical Center (1UL1-RR033176), Ryan Foundation, Genzyme Corporation, and BioMarin Pharmaceutical Inc.

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Quality of life and Gaucher disease

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Gaucher disease (GD) is a rare, lysosomal disorder caused by functional defects in the enzyme acid β-glucosidase. Along with hematologic and visceral symptoms of GD, patients may experience chronic fatigue resulting in functional disability and reduced quality of life. Quality of life (QoL) specifically fatigue, like pain, is a subjective perception involving patients with GD, the treating physician, or other health care providers. This perception may differ from one to another. The different perceptions need to be defined and understood. Fatigue is a major parameter of quality of life and has been researched extensively in many chronic diseases and although the GD literature and patients with GD consider fatigue a core symptom, only few clinical studies have systematically assessed it. This significant gap is reflected in the scientific literature; a MEDLINE search of "Gaucher disease" AND "fatigue" generated minimal results (MeSH terms, n = 4; text terms, n = 14). Of these studies, one showed that patients with GD considered fatigue one of the most debilitating symptoms of the disease, negatively impacting the ability to perform school, work, and social activities. The absence of practice guidelines and validated tools regarding the assessment of fatigue in GD may discourage health care providers from measuring this domain. We conducted a pre research survey among physicians and GD patients as to their perceptions of several symptoms and manifestations of GD. Both groups were asked to rate the value of 6 main symptoms and manifestations in their opinions on a "Likert scale" of one to nine. While physicians considered blood counts as the most valuable parameter (8.24) and fatigue the least valuable (5.7), patients valued fatigue as most valuable (7.9) and blood counts the least (4). They were also asked if fatigue was assessed and if so, how the assessment was done. Although 50% of the physicians responded that they assessed fatigue, 90% of the patients stated that they were never asked of this symptom. The results reflect a clear statistically significant gap in perception and the need for a validated assessment tool regarding fatigue. In summary the goals of this presentation are to define and recognize the different perceptions of fatigue, a core aspect of QoL. To establish the need for reliable, validated, and highly specific tools for assessing fatigue in clinical trials and the clinical management of GD. Fatigue assessment is an essential component of the therapeutic goals in GD.

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