# International LGMD Conference 2025

General issues

**For an Accurate Diagnosis**

During the conference, the importance of having an accurate diagnosis that includes the mutations of both parents was emphasized. This is crucial in order to receive any type of treatment. They highlighted various locations and centers across different countries, where genetic testing can be done and which tests are recommended: Genetic Panel, Genome Sequencing, Biopsy, Blood Tests, and/or MRI.

**Guidelines**
They discussed the treatment approach for LGMD patients, which is increasingly moving towards a multidisciplinary model in specialized centers, where patients are seen on the same day by several specialists such as: pulmonologists (respiration), cardiologists, neurologists, psychologists, nutritionists, occupational therapists, and physiotherapists. They are finalizing clinical guidelines on this topic, which will be distributed to hospitals and patient associations as recommendations, to help both doctors and patients.

**Prevalence of LGMDs**
They discussed the prevalence of LGMDs in Europe, identifying Calpainopathy (LGMD R1), Dysferlinopathy (LGMD R2), Dystroglycanopathies (LGMD R9), and Sarcoglycanopathies collectively as the most frequent forms of LGMD (in that order, from the most to the least common). The prevalence is similar in the U.S. and Brazil.

**Combination Treatments**

Combination therapies are increasingly used: gene therapy, antisense oligonucleotides (ASO), corticosteroids, adjuvant drugs, and comprehensive treatments. A case from the Turkish health institute was cited, where patients received a combination of gene therapy, corticosteroids, and ASO with promising results.

**Physical Activity and Stretching**

Physical activity helps maintain residual muscle function more than recover lost function. Range-of-motion exercises and daily functional activities are essential, while electrical stimulation can be harmful if not used correctly. Stretching is important to maintain flexibility, especially in individuals who spend a lot of time in wheelchairs.

**Biopsy vs. Genetic Testing**

Today, genetic sequencing is more accessible and is often the first option for diagnosing LGMD. Muscle biopsy is reserved for cases with doubts or ambiguous results. Modern percutaneous biopsy techniques require smaller samples and carry fewer risks.

**Gene and Cell Therapy**
Studies show that for gene therapy to be effective, a dosage threshold must be reached for the vectors to reach muscle cells. More muscle-specific vectors are being developed, which could reduce the required dosage by up to ten times and improve safety. Stem cell therapy faces the challenge of systemic delivery, which is still under investigation.

**Anesthesia and Dental Procedures**
Anesthesia in LGMD patients must be carefully planned, considering respiratory function and avoiding depolarizing muscle relaxants like Succinylcholine. Procedures like wisdom tooth extraction can be done under local anesthesia, but in high-risk respiratory cases, a surgical center is recommended.

**Vitamins, Supplements, and Hormones**
In general, a balanced diet is sufficient. The only potentially relevant vitamin is vitamin D, especially in regions with low sun exposure. Testosterone is used in children to induce puberty when delayed due to steroid use, but there is no evidence of benefit in post-pubertal adults.

**Patient Advocacy and Clinical Trials**
Identifying patients through global registries is crucial to attract the attention of the pharmaceutical industry and develop new clinical trials. The voice of patients and advocacy communities is essential to organize and demonstrate clinical trial readiness.

## Pharmaceutical Industry

**Sarepta Therapeutics Announcement**
The American company announced a pause on all gene therapy programs. This includes those for Sarcoglycanopathies (LGMD R3, R4, R5), as well as other programs for Dysferlinopathy (LGMD R2), Calpainopathy (LGMD R1), and Duchenne. The reason is recent cases of liver failure that led to the deaths of three patients: two with Duchenne and one with LGMD R3. For now, all programs are on hold, awaiting the results of patients treated with the Beta version (LGMD R4).

**Atamyo News**

The French pharmaceutical company that had begun gene therapy treatment for Gamma Sarcoglycanopathy (LGMD R5) ultimately did not attend.

**ML Bio Solutions**
They discussed BBP-418, a drug based on Ribitol, a sugar given to patients with LGMD R9. This experimental treatment is specific for LGMD R9.

**ASKBio**
They presented their gene therapy for LGMD R9. The drug AB-1003 restores the levels and functionality of FKRP, the altered protein in LGMD R9.

**Edgewise Therapeutics**

They are developing a series of drugs that do not depend on the specific genetic mutation. These drugs protect fast-twitch muscle fibers, which are typically most affected during contraction in dystrophy patients. These studies are being tested in Duchenne and Becker patients, but could also be effective for LGMD R9 and Sarcoglycanopathies.

## POSTERS

The three posters on Sarcoglycanopathies, presented by the GFB foundation, described the Quality and Diagnosis projects and the presence of Sarcoglycans at the neuromuscular junctions—a specialized structure that connects the nerve to the muscle. In their study, they observed that individuals affected by Sarcoglycanopathies have difficulties maintaining this structure. This results in poor muscle fiber contraction and earlier onset of muscle fatigue.
For the first time, the problem of Sarcoglycans is not only seen as a muscle issue but also as one affecting nerve transmission.