



Plain Language Summary

Miglustat in adult and juvenile patients with Niemann-Pick disease type C long-term data from a clinical trial

Citation: Wraith JE, Vecchio D, Jacklin E, Abel L, Chadha-Boreham H, Luzy C, Giorgino R, Patterson MC. Miglustat in adult and juvenile patients with Niemann-Pick disease type C: long-term data from a clinical trial. *Mol Genet Metab*. 2010 Apr;99(4):351-7. doi: 10.1016/j.ymgme.2009.12.006. Epub 2009 Dec 31.

<https://www.sciencedirect.com/science/article/pii/S1096719209005277?via%3Dihub>

Plain Language Summary: Results of a long-term extension clinical trial of miglustat in adult and juvenile patients with NPC

What is this study about?

This research study followed patients with Niemann-Pick Disease Type C (NPC) who were taking miglustat for a longer period of time. The scientists wanted to see how well the medicine worked over many years, not just the short term. This study included both adults and children with NPC.

What did the researchers do?

The scientists tracked patients who had been taking miglustat and watched how their disease progressed over time. They measured different aspects of the disease.

- **Number of Patients:** The initial trial involved 29 patients. In this extension phase, 21 patients completed 12 months of miglustat therapy, and 15 of those patients continued and completed 24 months of treatment.
- **Length of the Trial:** The main extension phase of the trial lasted 12 months. However, some patients continued treatment in a "continued extension" phase, with data collected for up to 24 months and safety data monitored for an even longer period, up to 66 months.
- **What Was Studied:** The study investigated the long-term effectiveness and safety of the drug miglustat in adult and juvenile patients with Niemann-Pick disease type C (NP-C). Key aspects studied included:
 - o **Neurological disease progression:** This was assessed by looking at horizontal saccadic eye movement (how eyes move quickly from side to side), swallowing ability, ambulation (walking), and cognitive function (thinking skills).
 - o **Safety and tolerability:** Researchers monitored for any adverse events (side effects) and how well patients tolerated the medication over time.

How does miglustat work?

Miglustat influences Niemann-Pick disease type C (NPC) in several ways. One mechanism of action involves blocking the body's production of specific fatty substances called glycosphingolipids. This particular approach is known as substrate reduction therapy. Additionally, it's thought that miglustat has other, more intricate effects that are not yet fully understood.

Why does this matter?

NPC is a progressive disease, meaning it typically gets worse over time. The earlier study proved miglustat could help in the short term, but patients and families needed to know if the benefits would last. Long-term data is crucial for understanding whether a treatment can provide lasting benefits and what side effects might develop over time.

What this means for patients:

This long-study also helped doctors better understand how to monitor patients taking miglustat over time and what to expect as treatment continues. The research showed that the medicine's benefits weren't just temporary - they could be sustained with continued treatment. This gave doctors and families confidence that miglustat could be a valuable long-term treatment option.

While miglustat has been approved for NPC patients in many countries, its use in the U.S. for NPC remains off-label (meaning the FDA didn't formally approve it for NPC). The FDA approved Miplyffa to be used in combination with miglustat for NPC.