MedicalXpress

Phase 2 clinical trial to treat rare hereditary muscle disease shows promise

February 22 2016

Researchers present the first clinical study that provides evidence that an extended-release sialic acid supplement may stabilize muscle strength in patients with GNE myopathy (GNEM), a rare hereditary, progressive, adult-onset muscle disease.

Patients with GNEM have mutations in a gene controlling a key enzyme in the synthesis pathway for sialic acid (SA). They typically experience distal muscle weakness, commonly presenting as foot drop. As the disease progresses, the muscle atrophy spreads to affect not only the lower extremities, but the upper extremities as well, leading to loss of ambulation and reliance on others for their care.

The therapy used aceneuramic acid extended release (Ace-ER) tablets in two dosages, 3 g/day and 6 g/day. For 24 weeks, one group received the 3g/day dosage, a second group received the 6g/day dosage, and a third group received a placebo. After 24 weeks, the placebo patients were switched to either the 3g/day or 6g/day dosage, while the treated groups continued at the same dosages. There were 47 patients randomized in this Phase 2 double-blind study.

Therapy with Ace-ER led to dose-dependent increases in serum sialic acid levels. Compared to placebo, patients who received the 6g/day dosages retained muscle strength in their upper extremities after 24 weeks. This effect was maintained in the upper extremities over an additional 24 weeks for the 6 g/day dose compared with the 3 g/day dose. In the lower extremities, a similar dose-dependent trend was

observed but did not reach statistical significance. The maintenance of strength was also reflected in clinician- and patient-reported outcomes of the participating patients.

"In summary, this is the first evidence in humans that SA supplementation may affect the progression of muscle weakness in GNEM," explained lead investigator Zohar Argov, MD, Hadassah-Hebrew University Medical Center, Jerusalem. "This Phase 2 study included subjects at various stages of the disease including those who were advancing to a wheelchair-bound state. The findings suggest that initiating treatment earlier in the disease course may lead to better outcomes. It is our hope that the Phase 3 trial will result in the first therapeutic agent for this condition."

More information: "Aceneuramic Acid Extended Release Administration Maintains Upper Limb Muscle Strength in a 48-Week Study of Subjects with GNE Myopathy: Results from a Phase 2, Randomized, Controlled Study," dx.doi.org/10.3233/JND-159900

Provided by IOS Press