

Muscle strength improvements shown in adults undergoing long-term growth hormone treatment

It is widely understood that adults who have a growth hormone deficiency, a condition that affects an estimated 10,000,000 people annually worldwide, tend to have excess body fat and less strength in their muscles. However, little has been known about how prolonged growth hormone therapy can impact muscle strength - until now. Dr. Galina Gotherstrom and colleagues at Goteborg University studied how 10 years of growth hormone treatment affected 109 people with adult-onset growth hormone deficiency. Study participants were an average age of 50. The investigators looked specifically at muscle strength and neuromuscular function.

They discovered that long-term treatment with growth hormones of at least 10 years improves muscle strength in people with adult-onset growth hormone deficiency. Specifically, the team learned that the first five years of treatment restored muscle strength, while during the second five years, growth hormone therapy was responsible for slowing normal age-related loss of strength. In a *Journal of Clinical Endocrinology and Metabolism* report, the researchers noted that "growth hormone replacement induced a sustained increase in lean mass and isometric knee flexor strength during the first five years and increases in upper leg and handgrip strength."

Muscle strength decreased during the second five years, returning to previous levels and in some cases, lower levels. But when the age and gender of each participant was taken into account, Gotherstrom's team found that "there were sustained and even progressive increases in the measures of muscle strength through seven years of follow-up." They concluded that the net result was that leg and hand strength returned to normal levels after 10 years of growth hormone replacement therapy.

News Release: Growth hormone slows age-related loss of strength www.reuters.com April 9, 2009

Growth hormones yield positive changes for AGHD patients

Scientists have good news for people with adult GH deficiency (AGHD). According to research presented at the Endocrine Society's 91st Annual Meeting, treatment with growth hormones dramatically improved body composition and serum levels of insulin-like growth factor 1 (IGF-1) in a dose-responsive manner in AGHD patients. In addition, serum low-density lipoprotein (LDL)-cholesterol decreased in both low- and high-dose GH-treated groups, but showed a significant increase only in the group treated with high-dose hormone replacement therapy.

The findings came from a randomized, placebo-controlled, double-blind study that included 96 Japanese patients aged 18 to 64 years with severe AGHD, including 68 with childhood-onset and 26 with adult-onset AGHD. The researchers also conducted a 48-week open-label study following the double-blind study.

"The goal of the studies were to assess whether a relationship exists between the dose of GH administered and body composition in this patient population," explains Katsuhiko Tachibana, Research and Development Division of Japan's JCR Pharmaceuticals, who presented the research at the annual meeting, which was held on June 11. "The changes in body composition, serum IGF-1 SDS, total cholesterol and LDL-cholesterol at the end of the double-blind study persisted throughout the open-label study, and there was no clinically relevant adverse event during both studies," he says. Funding for the study was provided by JCR Pharmaceuticals Co., LTD.

News Release: Growth hormone improves serum levels of insulin-like growth factor, cholesterol in dose-responsive manner www.docguide.com June 18, 2009
