

LE Magazine December 1998

REPORT

1st InCALM Conference The Whys and Wherefores of GH

...plus, what HIV teaches us about combating normal aging, how free radicals are the enemies of youth, and brain restoration therapy research

By Barbara Yost

What is the role of human growth hormone in treating older people whose quality of life has deteriorated significantly? According to Terry Grossman, a Denver, Colo., family physician whose practice is devoted to nutrition and anti-aging medicine, pioneering research is showing that HGH is most effective and prudent for these older patients, in particular when the benefits outweigh risks. They may suffer from heart failure, emphysema, osteoporosis and thin, dry skin. Such patients may be "shriveled like prunes," Grossman said.

Daily injections of HGH can alleviate many symptoms. The hormone can increase muscle mass, decrease fat mass, increase the contractibility of the heart and strengthen heart beat, increase bone density, reverse osteoporosis, and render the skin moister, thicker and more supple.

Grossman detailed his approach at the first conference sponsored by the International College of Advanced Longevity Medicine (InCALM) last May in Las Vegas, Nev. More than 250 attendees heard the message of "kinder, gentler" medicine, healthy aging and quality longevity. The common threads that ran through the presentations by 35 leading researchers in the anti-aging field were of individualized care and, in many cases, a holistic or homeopathic approach to treatment.

The two-day InCALM conference covered theories of aging, diagnostic testing biomarkers, hormonal therapies, use of growth hormones, life-span nutrition, free-radical testing and new technologies for restoring brain function.

The risks associated with the use of human growth hormone in treating the symptoms of incipient old age include cancer of the colon, prostate and breast. All have been linked to HGH use, Grossman said, but in many older patients, "life is crappy," he noted, and they may not live long enough to contract the cancers suspected of being caused by HGH. For them, HGH could be a palliative. Of greater concern is the young, healthy patient who wants to use HGH injections as a way to bypass a regimen of diet and exercise on the way to a more youthful physique.

"In a healthy 40-year-old who wants these benefits, there are risks," said Grossman, who once put himself on HGH therapy but grew tired of the daily injections into the belly or arm. He did, however, see dramatic results that continue post-treatment. "If it were a benign therapy, I would say fine, go for it." But, given the possible health threats, he questions whether the risk and expense—as much as \$400 to \$500 or more per month—justify use in the younger patient.

"I think we need to be cautious," he said, advising physicians to offer lifestyle modification as an alternative to drug therapy. Patients who reject such sound advice and demand HGH should be monitored carefully, to catch disease in its early stages, he said.

The use of homeopathic growth hormone also is a factor in treating AIDS, with positive results that tend to mimic the improvements seen in older (but healthy) individuals. While AIDS might not seem like a disease of aging, infection with HIV (the virus that causes AIDS), mimics rapid aging, according to Barbara Brewitt, chief scientific officer for Biomed Comm Inc. in Seattle, Wash.

HIV exhibits increased inflammation, failure of the adrenal gland and neuroendocrine hormones, failure of the immune system and osteoporosis. Patients also can suffer from lipodystrophy, the wasting that is characteristic of HIV victims, with loss of lean mass, bone and muscle density. Fat builds up in the body while the patient appears emaciated. This seems to accelerate in patients taking protease inhibitors, Brewitt said.

Brewitt is helping those patients infected with HIV do everything they can, using new homeopathic remedies that appear to equal or surpass the benefits of anti-viral therapies. Homeopathy uses minute amounts of natural substances to spur the immune system. But in a 1995 study conducted at the University Health Clinic in Seattle, and replicated two years later in seven other U.S. cities, Brewitt administered oral homeopathic growth hormone to 30 HIV-positive patients who were not taking anti-viral drugs. They were matched with patients taking placebos who also were given homeopathic growth factors after four months. Patients treated with the homeopathic therapy showed decreased sedimentation rates (an indication of inflammation), normal-to-raised rates of CD4 lymphocytes, and lowered viral loads. Their physical functions, immune systems and lean body mass levels also improved.

Brewitt is pleased with the success of her "cocktail" that includes such substances as insulin-like growth factor (IGF), platelet-derived growth factors (PDGF BB), transforming growth factor beta 1 (TGF1) and granulocyte macrophage colony stimulating factor (GM-CSF). "I'm very optimistic," she said. "We want to do longer studies and ask for more sophisticated responses."

Human growth hormone and insulin-like growth factor have anti-aging benefits that include increased immune function, stimulation of lean body mass and stimulation of the growth of organs that shrink with age—the heart, liver, spleen, kidneys, thymus, thyroid. IGF also improves energy levels, enhances kidney function, strengthens bones and lowers blood pressure. "It works by balancing electromagnetic fields in the body. It helps to optimize who people are" by improving communication between the immune, nervous and hormonal systems, Brewitt said.



Brewitt's HIV studies may have implications for anti-aging research. For example, she believes that homeopathic growth hormone therapies stimulate production of insulin-like growth factor. In small clinical testing of human growth hormone, Brewitt said she found physiological increases in serum IGF compared with placebo.

While growth hormone's impact on aging is intriguing, researchers have long studied the connection between free radicals and aging, and just as long been daunted by the apparent complexity of the aging process. However, the mystery may be simpler than once thought.

After reviewing 10 to 15 years of scientific literature, Richard Cutler, president and chief executive officer of the Genox Corp. in Baltimore, believes that free radicals represent not one of many factors involved in aging, but one of just a few primary factors, reducing to a manageable number the avenues that must be explored in what is probably a major mechanism of aging. Cutler concludes that the better a species is at controlling free radicals, the longer lived it will be. Though not the largest of mammals, humans have the longest average life span, apparently because of their ability to control free radicals. This, in turn, may be due to the efficiency of antioxidants in the body. Antioxidants come from the foods we eat—foods high in carotenoids and vitamin E, for instance.

"The real news is that these vitamins are of interest not just as antioxidants. They can be longevity determinants," Cutler said. People can be tested for antioxidant levels, much as they can be tested for cholesterol. Infants characteristically have high levels of antioxidants, including those they are born with and those they receive from their mothers' breast milk.

Cutler said it has been known for some time that long-lived mothers bear long-lived children. Until now, only genetic factors were credited. But recent evidence seems to indicate that antioxidants delivered in breast milk might also contribute to longevity. At Genox, Cutler takes oxydative-stress profiles of patients to gauge the level of damage from free radicals. About 5 percent of patients who demonstrate high levels of oxydative stress are suffering persistent, low-grade infections, he said, and can be helped by administration of antibiotics. In addition, oxydative stress can result in cardiovascular disease and cancer, he said. Using information gleaned from an oxydative-stress profile, damage can be minimized through diet. "People like to know they're peaking out and that they're doing everything they can do."

On another front, ground-breaking work in the field of brain-function restoration is being done by Margaret Ayers, a psychoneurophysiologist and president of Neuropathways EEG Imaging Inc., in Beverly Hills, Calif. Ayers has patented what she says is the world's first all-digital real time electroencephalogram (EEG) neuro feedback system. It boasts a less-than one-thousandth of a second delay between the time the brain wave occurs and its appearance on the video screen for feedback. She trains patients to inhibit or eliminate brain patterns that don't belong in the brain. Her system has been used to treat patients with brain injuries, stroke, cerebral palsy, Parkinson's disease, epilepsy, depression, coma and memory loss. It is not effective, she said, in treating Alzheimer's disease, which she believes is caused by a virus.

Ayers, who has been doing this research for 25 years and formerly worked in the field of epilepsy and quadriplegia at the University of California, Los Angeles, medical school, said the therapy trains damaged areas of the brain to stop misfiring, and healthy areas to take over functions lost in the damaged areas. "We remind the brain how to remember," she said.

Her studies have debunked some myths about brain injury-that, for instance, an electroencephalogram cannot be changed after trauma, and that permanent re-learning is impossible. Neither is true, Ayers said, and she believes her machine proves it.

"If you can show a person his or her brain's firing pattern at less than one-thousandth of a second, you can get permanent changes in the firing pattern of the unconscious," she said.

With comatose patients, she attaches a light box to her EEG system and holds open the patient's eyelids so that light as well as sound can penetrate the brain whenever the individual inhibits the abnormal brain wave pattern. She said there are no harmful side effects and claims a 98-percent success rate.

Ayers' message to conference participants also encouraged a melding of physical and psychological medicine in healthy patients. Emotions influence the body, she said. "They're together in the brain, but in practice we treat them separately." She said routine physical exams should include a brain check, just as it includes tests for cholesterol and high blood pressure.

In addition to InCALM's array of research and treatment presentations, 51 health professionals from a wide range of medical disciplines sat for a certification exam offered by the International Board of Advanced Longevity Medicine (IBALM), offered by InCALM. Those who pass will be awarded a kind of "learner's permit" to proceed with research in the field of longevity medicine, maintain standards of practice, and perform follow-up work on patients. Eventually they will be certified in anti-aging/longevity medicine.

A second InCALM conference was planned for the end of October in Reno, Nev.

InCALM, founded a year ago and headquartered in Chicago, was created to provide education, training and certification in anti-aging/longevity medicine for all health professionals. The organization is an alternative professional association to the American Academy of Anti-Aging Medicine (A⁴M), also headquartered in Chicago and with a certification process of its own.

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