Insmed Reports Detailed Positive Results from Its Pivotal Clinical Trial of SomatoKine in Patients with Growth Hormone Insensitivity Syndrome

Insmed Incorporated (NASDAQ: INSM) announces updated results for the Company's pivotal Phase III clinical trial evaluating SomatoKine(R) (mecasermin rinfabate), a once daily insulin-like growth factor I (IGF-I) replacement therapy delivered as a proprietary complex of rhIGF-I/rhIGFBP-3, in children with short stature due to growth hormone (GH) insensitivity syndrome (GHIS). The primary endpoint of change in height velocity after 6 months on treatment was achieved and was highly statistically significant (p

This prospective clinical study was designed to gain FDA approval for the treatment of GHIS with SomatoKine. At the initiation of the study, all patients were pre-pubertal and identified as having GHIS (including subjects with GH receptor deficiency and GH gene deletion). Patient ages were between 3 and 15 years, with an average age of 8 years. The starting heights ranged from 27 to 50 inches (average 35 inches). The children received once-daily injections of SomatoKine in the evening at doses of 0.5 - 2.0 mg/kg. Individual dose adjustments were made to restore and maintain serum IGF-I levels in the normal range.

Efficacy

Of the 29 patients enrolled in the study, 25 patients had sufficient data for 6 months to qualify as evaluable for efficacy. All patients were treated with once daily subcutaneous injections of SomatoKine. The average increase in annualized height velocity from pre-treatment to on-treatment at Month 6 was 5.0 cm/yr, meeting the primary efficacy endpoint (n=25, p

Increases in height velocity were related to both the dose received and the IGF-I blood levels reached during treatment. Patients who were maintained at a low fixed dose (0.5-1.0 mg/kg) had an average annualized height velocity at Month 6 that was 4.0 cm/yr greater than pre-treatment height velocity (p

The patients receiving doses of 0.5-1.0 mg/kg who achieved IGF-I levels in the desirable range when measured at the Month 1 visit had average annualized height velocities of 9.8 cm/yr at Month 6 and 8.3 cm/yr at Month 12, whereas those with sub-optimal IGF-I levels on the fixed dose had average annualized height velocities of 6.6 and 5.6 cm/yr at Months 6 and 12, respectively. The overall increase in height velocity at Month 12 in this group remained highly statistically significant (p

Safety

The safety of SomatoKine has been assessed in a variety of clinical settings in over 250 subjects (ages 5 months to 92 years), utilizing a broad range of doses (between 0.3 and 8.0 mg/kg/day). The pivotal clinical trial in GHIS patients employed an intensive, prospective monitoring program to track the safety and tolerability of SomatoKine therapy in all enrolled patients. This program included fundoscopic examinations of the eye, regular blood glucose measurements, antibody testing, electrocardiograms, echocardiograms, abdominal and pelvic ultrasounds, audiograms, and extensive laboratory assessments. The results of this intense safety program indicate that treatment with SomatoKine is safe and injections were well tolerated. The most common adverse events were injection site reactions, including erythema and lipohypertrophy.

Overall patient compliance was >98%. No patient dropped out of the study due to an adverse event related to SomatoKine therapy. Hypoglycemia, usually rated as mild and asymptomatic, was reported in 10 patients, and in most instances was identified through the safety monitoring process. One case of asymptomatic

hypoglycaemia was managed as an inpatient, resolved uneventfully, and the patient continues on SomatoKine therapy. Enlarged tonsils, an expected reaction to treatment that has been reported frequently with free rhIGF-I therapy in GHIS, were reported in 4 patients. Antibodies to the injected proteins, which are commonly seen with administration of other recombinant proteins, including free-rhIGF-I in this population, were identified and did not appear to affect efficacy or safety. Events that have been reported in this patient population treated with free IGF-I therapy that have not been seen in this study to date include facial nerve paralysis and hypoglycemic seizures.

Dr. Kenneth Attie, Vice President of Medical Affairs and Chief Medical Officer for Insmed, commented: "We are very pleased with the efficacy and safety results achieved to date with our once-daily IGF-I therapy, SomatoKine, and to see the positive impact it has had on the lives of these patients. It is gratifying to see that that the therapy has provided significant gains in height and rate of growth while minimizing the more worrisome side effects that are associated with free-IGF-I therapy." Dr. Attie added: "We continue to work closely with the FDA, which has given priority review to our NDA submission for SomatoKine. Our goal is to address the unmet medical needs of this orphan-designated patient population by providing them with this long-awaited, safe and effective growth-promoting treatment."

Louis Underwood, M.D., Professor of Pediatrics, University of North Carolina, Chapel Hill, and member of the pivotal study Steering Committee commented: "I have enjoyed being a part of this well-designed and well-conducted clinical trial. I am encouraged to see that the combined therapy of rhIGF-I/rhIGFBP-3 is performing as well as we had expected."

Further results from this pivotal trial will be presented at the European Society of Pediatric Endocrinology and Lawson Wilkins Pediatric Endocrine Society Meeting 2005 (ESPE/LWPES 7th Joint Meeting Paediatric Endocrinology). This meeting will take place 21-24 September 2005 in Lyon, France.

About the Study

This prospective, multicenter, Phase III clinical trial is intended to evaluate the safety and efficacy of SomatoKine in children and adolescents with GHIS. The formal Steering Committee for the study includes the foremost thought leaders in the field: Louis Underwood, M.D., Professor of Pediatrics, University of North Carolina, Chapel Hill, Professor Martin Savage, M.D., Pediatric Endocrinology, St. Bartholomew's Hospital, London and Cecilia Camacho-Hubner, M.D., Reader of Pediatric Endocrinology, St. Bartholomew's Hospital, London.

GHIS encompasses a variety of genetic and acquired conditions in which the action of growth hormone (GH) is absent or severely attenuated, resulting in low serum levels of IGF-I. Because IGF-I is the primary mediator of the growth-promoting actions of GH, SomatoKine replacement therapy in children with GHIS is intended to bypass the blocked actions of GH by replacing the deficient IGF-I, resulting in improved growth. SomatoKine has received orphan drug designation for the GHIS indication in the United States and Europe. Orphan drug designation is conferred upon investigational products by the FDA for indications that affect fewer than 200,000 people in the United States.

More on SomatoKine(R)

Insmed's SomatoKine is a proprietary drug product for the delivery of recombinant insulin-like growth factor I (IGF-I). It is administered as a preformed complex with a recombinant form of its natural binding protein, insulin-like growth factor binding protein 3 (rhIGFBP-3). The novel compound is administered as a once-daily subcutaneous injection, which can restore and maintain IGF-I levels to physiologically relevant levels. The binding protein (rhIGFBP-3) extends the residence time of IGF-I in the blood, conferring a superior pharmacokinetic profile as compared with rhIGF-I alone. In the bound state, the IGF-I is inactive, and remains so until delivered to target tissues in the body where it is released and becomes biologically active. This reduces the risk of short- and long-term safety concerns that have been associated with unrestrained levels of free IGF-I.

SomatoKine has been investigated in a number of other indications in addition to growth disorders. In patients with Type 1 and Type 2 diabetes, administration of SomatoKine demonstrated a significant improvement in blood sugar control and a significant reduction in daily insulin use. In children and adults suffering severe burn injury, administration of SomatoKine demonstrated a significant improvement in muscle protein synthesis and a significant reduction in the inflammatory response associated with the trauma. In elderly individuals recovering from hip fractures, administration of SomatoKine demonstrated a significant improvement in functional recovery and bone mineral density. In addition to the GHIS program, SomatoKine is currently being studied in a Phase II clinical trial at the University of California, San Francisco in patients with HIV-Associated Lipodystrophy, and in a Phase II clinical trial at the University of Cambridge, U.K. in patients with Extreme Insulin Resistance. Studies in additional indication will commence in the second half of 2005.

About Insmed Incorporated

Insmed is a biopharmaceutical company focused on the discovery and development of drug candidates for the treatment of metabolic diseases and endocrine disorders with unmet medical needs. For more information, please visit www.insmed.com.

Statements included within this press release, which are not historical in nature, may constitute forward-looking statements for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements in this press release include, but are not limited to, statements regarding planned clinical trial design, our regulatory and business strategies, plans and objectives of management and growth opportunities for existing or proposed products. Such forward-looking statements are subject to numerous risks and uncertainties, including risks that product candidates may fail in the clinic or may not be successfully marketed or manufactured, the company may lack financial resources to complete development of product candidates, the FDA may interpret the results of our studies differently than we have, competing products may be more successful, demand for new pharmaceutical products may decrease, the biopharmaceutical industry may experience negative market trends and other risks detailed from time to time in the company's filings with the Securities and Exchange Commission. As a result of these and other risks and uncertainties, actual results may differ materially from those described in this press release. For further information with respect to factors that could cause actual results to differ from expectations, reference is made to reports filed by the Company with the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended. The forward-looking statements made in this release are made only as of the date hereof and Insmed disclaims any intention or responsibility for updating predictions or financial guidance contained in this release.