Aastrom Biosciences Reports Positive Bone Repair Results in Clinical Feasibility Trial

-- Results Indicate Company's Tissue Repair Cell Product Achieves Local Bone Generation for Bone Grafting --

Ann Arbor, Michigan, May 17, 2005 -- Aastrom Biosciences, Inc. (Nasdaq: ASTM) announced today the results from its feasibility clinical trial conducted with the Institut de Terapia Regenerativa Tisular (ITRT) in Barcelona, Spain to evaluate the use of Aastrom's Tissue Repair Cells (TRCs) for the treatment of severe long bone non-union fractures. A report with details of the clinical study is being filed today on Form 8-K with the SEC, providing information on each patient treatment and the results obtained. The report states that all of the patients treated with Aastrom's TRCs, an autologous bone marrow-derived cell product, exhibited clinical and functional healing, with 5 of 6 treatments showing bone regeneration at the fracture site as determined by radiographic imaging by 6 months. The results were notable in that each patient had failed prior treatment with standard of care methodologies and had a poor prognosis for healing. This feasibility trial suggests that Aastrom's autologous TRCs may offer a new way to achieve local bone regeneration for bone grafting and other clinical indications for bone repair. In addition to the Form 8-K filed with the SEC, the report detailing the results from the feasibility clinical trial in Barcelona may be accessed on Aastrom's website using the following link: http://www.aastrom.com/pdf/Whitepaper_Barcelona-051205.pdf.

The trial, conducted at Hospital General de l'Hospitalet, Centro Medico Teknon and Hospital de Barcelona-SCIAS, accrued 5 patients, with one patient receiving treatment for two separate fractures, for a total of 6 different treatments. All patients had severe non-union fractures of a long bone (3 tibia, 2 humeri, 1 clavicle), which had failed to heal in previous standard of care treatments. The patients all underwent open surgery to apply a metal plate internal fixation (replacing previous failed fixation) and Aastrom TRCs, to aid in the local bone regeneration. The TRCs were mixed with synthetic commercial matrix and an autologous fibrin, and applied directly at the fracture site. There are ongoing post-surgical evaluations of all patients using standard clinical and radiographic evaluations of the healing fracture site. To date, two of the patients have been evaluated for more than one year after surgery, and a third patient has been monitored for more than 8 months. No complications or treatment-associated adverse effects have been observed.

The timing of the new bone growth, based on radiographs read by a third party expert radiologist, varied between patients. Radiographically evident callus formation (bony tissue formed during the healing of a fractured bone) was first detected in 5 of 6 procedures at a mean of 11 weeks (minimum 6 weeks, maximum 24 weeks); the callus was stable by a mean of 17 weeks (minimum 10 weeks, maximum 24 weeks). All patients can bear weight on the treated fractured bone, have had their range of motion in the limb restored, and are free from pain. Only one patient (the patient with two fractured legs) remains on occupational disability, because his job requires a high level of physical effort.

An unexpected favorable clinical observation was that the inflammation and edema that are characteristic of typical bone grafting procedures in fracture healing procedures were either reduced or were absent at the surgical site post-operatively in all patients.

"As the physician treating these patients, I am extremely encouraged by our first use of TRCs, and believe that they may represent a new tool in orthopedic medicine," commented Carlos Solano-Puerta, M.D., the principal clinical investigator for the Barcelona trial. "Even though our patients had very severe fractures which had previously failed to heal, all exhibited good responses to the new treatment with TRCs, with the desired result of bone callus formation and bone remodeling. We are looking forward to treating additional patients with this innovative cell product."

With this study completed, Aastrom is now preparing to expand this long bone fracture trial in Barcelona, Spain to implement several refinements in the procedure intended to further improve the use of TRCs in bone grafting.

The study results filed by Aastrom on Form 8-K show radiographic images for each type of long bone treated, with images obtained prior to treatment with TRCs, immediately after treatment and at a later date, as well as pictures of the surgical process. Other relevant data regarding the injuries, prior therapy and clinical recoveries is provided as well.

"We are very encouraged with the results of this feasibility study both for patient response, as well as the implementation and use of TRCs in the clinical setting," stated R. Douglas Armstrong, Ph.D., Chief Executive Officer and Chairman of Aastrom. "Each of our bone graft feasibility clinical studies is designed to determine how best to use TRCs in local bone regeneration surgical indications. This study, although small, provided key safety data, information on how best to use TRCs in the surgical setting, and very exciting recovery outcomes."

Aastrom is currently also engaged in a related clinical trial of its TRCs in the United States, where a multi-center trial is underway with four sites currently participating. This trial is using TRCs in conjunction with an allograft bone graft matrix provided by the Company's partner, MTF (Musculoskeletal Transplant Foundation; Edison, NJ). TRCs are also being used in a human clinical study in Spain for a different application: the generation of jaw bone preparatory to maxillary sinus lift procedures. Although each of these studies is utilizing TRCs for bone regeneration, each is evaluating a different approach in how the TRCs are used and applied. The results are expected to help guide both Aastrom and the treating clinician toward the most advantageous way to use TRCs as a new orthopedic therapeutic tool.

About Tissue Repair Cells

Tissue Repair Cells (TRCs) are Aastrom's proprietary mixture of bone marrow-derived adult stem and progenitor cells produced using patented single-pass perfusion technology in the AastromReplicell® System. The clinical procedure begins with the collection of a small sample of bone marrow from the patient's hip in an outpatient setting. TRCs are then produced in the automated AastromReplicell System over a 12-day period. It has been demonstrated in the laboratory that TRCs are able to develop into different types of tissue lineages in response to inductive signals, including blood, bone, cartilage, adipose and vascular tubules. In previous clinical trials, TRCs have been shown to be safe and reliable in regenerating certain normal healthy bone marrow tissues.

About Aastrom Biosciences, Inc.

Aastrom Biosciences, Inc. (Nasdaq: ASTM) is developing patient-specific products for the repair or regeneration of human tissues, utilizing the Company's proprietary adult stem cell technology. Aastrom's strategic position in the tissue regeneration sector is enabled by its proprietary Tissue Repair Cells (TRCs), a mix of bone marrow-derived adult stem and progenitor cells, and the AastromReplicell® System, an industry-unique automated cell production platform used to produce cells for clinical use. TRCs are the core component of the products Aastrom is developing for severe bone fractures, ischemic vascular disease, jaw reconstruction and spine fusion, with Phase I/II level clinical trials active in the U.S. and EU for some of these indications.

For more information, visit Aastrom's website at www.aastrom.com.

This document contains forward-looking statements, including without limitation, statements concerning planned clinical trials, product development objectives, potential advantages of TRCs and the AastromReplicell® System, and potential product applications, which involve certain risks and uncertainties. The forward-looking statements are also identified through use of the words "may," "expected," "can," "believe," and other words of similar meaning. Actual results may differ significantly from the expectations contained in the forward-looking statements. Among the factors that may result in differences are potential patient accrual difficulties, clinical trial results, potential product development difficulties, the effects of competitive therapies, regulatory approval requirements, the availability of financial and other resources and the allocation of resources among different potential uses. These and other significant factors are discussed in greater detail in Aastrom's Annual Report on Form 10-K and other filings with the Securities and Exchange Commission.

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