MannKind Presents New Scientific Data at 54th Annual Meeting of the European Association for the Study of Diabetes

October 3, 2018

Presentation 55 **Total and severe hypoglycemia is reduced with use of inhaled Technosphere® Insulin (TI) relative to insulin aspart in type 1 diabetes**

Poster 1046; PS 097 **Diabetes duration, BMI, and HbA1c have greater effects on Pulmonary Function (PF) than inhaled Technosphere® Insulin (TI)**

WESTLAKE VILLAGE, Calif., Oct. 03, 2018 (GLOBE NEWSWIRE) -- MannKind Corporation (Nasdaq:MNKD), announced that it presented new scientific data in an oral and poster presentation at the 54th Annual Meeting of the European Association for the Study of Diabetes (EASD) in Berlin, Germany. The oral presentation (presentation 55) and poster presentation (poster 1046; PS 097) both took place Tuesday, October 2, 2018. MannKind's STAT study results were also presented at the conference in two poster presentations (Poster 813; PS 068 and Poster 677; PS 051).

Oral Presentation Highlights

Title: **Total and Severe Hypoglycemia is Reduced with Use of Inhaled Technosphere Insulin (TI) Relative to Insulin Aspart in Type 1 Diabetes**

Presenter: David Kendall, MD, Chief Medical Officer, MannKind Corporation

Description: A post-hoc regression analysis of a representative subset of the AFFINITY 1 (24-week treat-to-target in type 1 diabetics) evaluated overall and severe hypoglycemic event rates in patients with Afrezza relative to subcutaneous insulin.

Highlights:

- Individuals on Afrezza experienced significantly lower rates of hypoglycemia vs insulin aspart
  - Overall rates of hypoglycemia with Afrezza were 26% lower across all levels of HbA_{1c}
- Differences in the average achieved HbA_{1c} do not account for the observed differences in hypoglycemia rate
- Afrezza allows for greater HbA_{1c} reduction with lower rates of hypoglycemia
  - HbA_{1c} could be reduced from 8.0% to approximately 6.8% and meet treatment goal with no increase in hypoglycemia rate;
  - Patients already at 6.8% HbA_{1c} would be expected to experience 4 fewer hypoglycemia events per month.

Conclusion: The ultra-rapid time action profile of Afrezza provides tight glycemic control without increasing the risk of hypoglycemia. Switching to Afrezza as mealtime insulin therapy may also benefit the patients already at HbA_{1c} goal by reducing the frequency of hypoglycemic events.

Poster Presentation Highlights

Title: **Diabetes Duration, BMI, and HbA1c Have Greater Effects on Pulmonary Function (PF) Than Inhaled Technosphere® Insulin**

Presenter: Frank Pompilio, PharmD, VP, Medical Affairs, MannKind Corporation

Description: Data from a pulmonary function study of patients with type 1 and type 2 diabetes was utilized to evaluate the effects of diabetes duration, body mass index, and HbA1c on baseline PF and changes in PF during 24 months of treatment when compared in patients receiving Afrezza and usual care.

Highlights:

- The magnitude of Afrezza's effect on FEV_1 was comparable to those normally associated with diabetes-related factors such as high body mass index (BMI), elevated HbA_{1c} and long-standing diabetes
- None of these effects were clinically significant
- Afrezza-related decreases in FEV_1 were small, non-progressive and reversible after two years of treatment

Conclusion: Diabetes-related factors are associated with reductions in pulmonary function that exceed the reversible changes seen with inhaled insulin treatment. The effects of Afrezza on pulmonary function are not clinically significant, do not increase with time, and have been demonstrated to resolve if treatment with Afrezza is stopped.

“These two presentations represent just two of the numerous disclosures we hope to publish in the coming months,” said David Kendall, M.D., Chief Medical Officer of MannKind Corporation. “These two studies are critical to helping build awareness of the potential clinical impact and longer term safety of Afrezza. These and other recently published data significantly advance our understanding of the treatment opportunity that Afrezza therapy may offer. MannKind’s medical, regulatory and safety teams are committed to ensuring that this information is made available to both individuals living with diabetes and the medical community alike, and we are pleased that we were able to share this data more broadly at EASD.”

About Afrezza®
Available by prescription, Afrezza® (insulin human) Inhalation Powder is a rapid-acting inhaled insulin indicated to improve glycemic control in adult patients with diabetes mellitus. Afrezza consists of a dry powder formulation of human insulin delivered from a small and portable inhaler. Administered at the beginning of a meal, Afrezza dissolves rapidly upon inhalation to the lung and passes quickly into the bloodstream (in less than one minute). This rapid absorption allows Afrezza to begin reducing blood sugar levels within about 12 minutes of administration.

Afrezza is available in 4-unit, 8-unit and 12-unit single-dose cartridges of insulin powder that can be used, as prescribed by a health care professional, in combination with other diabetes medications to achieve target blood sugar levels. For Afrezza doses exceeding 12 units, patients may use a combination of existing cartridge strengths. For more information on Afrezza, please visit www.afrezza.com.

About MannKind Corporation
MannKind Corporation (NASDAQ:MNKD) focuses on the development and commercialization of inhaled therapeutic products for patients with diseases such as diabetes and pulmonary arterial hypertension. MannKind is currently commercializing Afrezza® (insulin human) Inhalation Powder, the Company's first FDA-approved product and the only inhaled rapid-acting mealtime insulin in the United States, where it is available by prescription from pharmacies nationwide. MannKind is headquartered in Westlake Village, California, and has a state-of-the art manufacturing facility in Danbury, Connecticut. The Company also employs field sales and medical representatives across the U.S. For further information, visit www.mannkindcorp.com.

Forward-Looking Statements
This press release contains forward-looking statements that involve risks and uncertainties. Words such as "believes," "anticipates," "plans," "expects," "intends," "will," "goal," "potential" and similar expressions are intended to identify forward-looking statements. These forward-looking statements are based upon MannKind's current expectations. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties detailed in MannKind's filings with the SEC, including its annual report on Form 10-K for the year ended December 31, 2017. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this press release. All forward-looking statements are qualified in their entirety by this cautionary statement, and MannKind undertakes no obligation to revise or update any forward-looking statements to reflect events or circumstances after the date of this press release.

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