Study 171 Shows Hypoglycemia is Reduced with Use of Afrezza® Relative to Insulin Aspart in Type 1 Diabetes

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Publication in DIABETICMedicine Now Available Online

WESTLAKE VILLAGE, Calif., Dec. 20, 2019 (GLOBE NEWSWIRE) -- **MannKind Corporation (NASDAQ: MNKD)** announced today that *Hypoglycemia is reduced with use of inhaled Technosphere® Insulin relative to insulin aspart in type 1 diabetes mellitus* has been published online in DIABETICMedicine.

This post-hoc analysis was designed to further evaluate the risk of hypoglycemia observed in adults with type 1 diabetes who were treated with inhaled Technosphere Insulin (Afrezza®) or subcutaneous insulin aspart. Specifically, the research controlled for the level of any HbA1c achieved on the incidence rates of hypoglycemia (low levels of sugar in the blood) in 375 adults with type 1 diabetes. The data demonstrated the following:

- Participants treated with Afrezza experienced statistically significantly lower rates of level 1 (blood glucose ≤ 3.9 mmol/L or 70 mg/dL) and level 2 (blood glucose ≤ 3.0 mmol/L or 54 mg/dL) hypoglycemic events. There was also a trend towards lower rates of level 3 hypoglycemia (requiring external assistance for recovery) than participants treated with insulin aspart.
- The lower rate of hypoglycemia with Afrezza was observed across the range of end-of-treatment A1c levels.
- Due to its unique pharmacokinetic/pharmacodynamic profile, Afrezza was associated with higher rates of hypoglycemia 30–60 minutes after meals but significantly lower rates 2–6 hours after meals.

These data indicate that participants using Afrezza experienced clinically non-inferior glycemic control and lower hypoglycemia rates across a range of A1c levels compared with participants receiving insulin aspart.

Hypoglycemia and fear of hypoglycemia are barriers to effective insulin therapy and may prevent people with diabetes from achieving glycemic targets. Potential risks associated with hypoglycemia include, but are not limited to, treatment costs, limiting the individual patient's capacity to intensify diabetes control, individual patient rates of productivity, as well as many other debilitating effects.

The published research can be found online at https://onlinelibrary.wiley.com/doi/abs/10.1111/dme.14202

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 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 about 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 orally inhaled ultra 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.

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