Pulmonary Insufflation of ROSE-010 (GLP-1 Peptide Analogue) Completely Suppresses the MMC in the Conscious Rat: Comparison with the Intravenous andSubcutaneous Routes

A. Smithson1, S. Villanueva1, S. Daniels1, B. Wallin2, E. Kenny3, P.M. Helsløi3
1MannKind Corporation, Paramus, NJ, USA; 2Department of Medicine, Karolinska Institutet Solna, Stockholm, Sweden; 3Rose Pharma, Copenhagen, Denmark

Abstract

Intranasal Nausea suppression administration of ROSE-010, a GLP-1 analogue, reduced bowel spasm and relieved acute nausea in patients with irritable bowel syndrome (IBS). The feasibility of intranasic pulmonary therapy was studied by inhibiting gut motor complex (MMC) in healthy volunteers. The test article was a novel inhalation formulation of ROSE-010 prepared using Technosphere® technology. Technology: Pulmonary administration of ROSE-010 significantly reduced MMC cycle length from 18.7 ± 7.3 to 105.9 ± 9.5 min (n = 6), and 0.1 mg/kg ROSE-010 from 19.4 ± 2.9 to 13.4 ± 3.2 min; 10% ROSE-010 (0.1 mg/kg) increased MMC cycle length from 18.2 ± 2.2 to 1.4 ± 0.2 min at 161.5 mg/kg; and 10% ROSE-010 (0.1 mg/kg) increased MMC cycle length from 18.3 ± 2.2 to 1.4 ± 0.2 min at 161.5 mg/kg. These data suggest that ROSE-010 can have a therapeutic effect on MMC and could be an alternative to the treatment of IBS.

Methods

MannKind Pharmaceuticals Corporation, Paramus, NJ, USA; 2Department of Medicine, Karolinska Institutet Solna, Stockholm, Sweden; 3Rose Pharma, Copenhagen, Denmark

Introduction

The research was funded in part by MannKind Corporation and Rose Pharma.

Results

Effect of ROSE-010 on MMC Cycle Length

Conclusions

MMC inhibition following pulmonary insufflation of ROSE-010 Technosphere® powder is comparable to inhibition following intravenous as subcutaneous administration of ROSE-010 alone.

References