Hua Medicine Reports Strong Results for Early Diabetes Drug Trial

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Hua Medicine of Shanghai announced it will start a Phase Ib trial of its glucokinase activator (GKA) treatment for type 2 diabetes. In the Phase Ia trial, HMS5552 produced positive results in healthy volunteers. The Phase Ib trial will test the drug in type 2 diabetics. Hua, which in-licensed the second generation GKA drug from Roche (SIX: ROG), holds global rights to HMS5552.

In the Phase Ia trial, single doses of HMS5552 caused dose-dependent changes in glucose and glucose-stimulated insulin release (GSIR). According to Hua, the drug increased post-meal GSIR several times above the levels of the placebo group, with very low risk for hypoglycemia. Each dose cohort consisted of ten volunteers, eight of whom received HMS5552 and two a placebo.

At present, there are no GKA drugs approved for use anywhere in the world, though several biopharmas are developing them. Because of the excellent early results, Hua thinks HMS5552 may be a best-in-class candidate.

Hua in-licensed the clinical-trial-ready drug from Roche in late 2011, making an upfront payment, and agreeing to pay milestones and royalties in the future, though specific details were not disclosed (see story).

In the Phase Ib trial, Hua will test the drug for two weeks in each patient, using a randomized, double-blind, placebo-controlled, ascending-dose trial design. The test will enroll 50 diabetic adult males and female patients. It will assess safety, tolerability, and pharmacokinetics of HMS5552, plus associated hormone biomarkers and pharmacodynamics. Hua expects to complete the Phase Ib trial by Q3 of this year "Having abnormally high blood glucose levels after a meal is typical of diabetics and pre-diabetics with impaired glucose tolerance or IGT. Asian patients in particular are at even higher risk for diabetes and IGT compared to Western patients, because of both dietary and genetic factors. In particular, Chinese diabetics suffer from an earlier deterioration in beta cell function. That's why these Phase Ia results showing higher GSIR profiles were important in affirming that HMS5552 should be particularly beneficial in treating Chinese and Asian-dominant diabetics," said Yi Zhang, M.D., Director of Clinical Development at Hua Medicine.

"No previous GKA in the clinic had shown significant effects on patient plasma GLP-1 levels, but our pre-clinical models suggested that HMS5552 could indeed increase GLP-1," stated Hua Medicine CEO, Li Chen. "This effect appears to persist in our Phase 1a trials, and if confirmed in future trials would mark a significant advance in diabetes treatment, since GKA would be affecting most of the major glucose-regulation pathways in the body including insulin secretion, postprandial glucose control, hepatic glucose production, and GLP-1 modulation. We hope this multi-pathway targeting strategy will eventually lead to better, more effective therapies to control disease progression for all patients, but especially the subtype of earlier-stage diabetic patients most predominant in China and Asia."

Hua Medicine was formed in 2011 with $50 million in start-up capital from leading US venture capitalists and WuXi PharmaTech (NYSE: WX). Li Chen, PhD, CEO and Co-founder, was previously Chief Scientific Officer at Roche China. In an exclusive interview with ChinaBio? Today, Dr. Chen said Hua was structured on a two-pronged business plan: in-licensing from western pharma, and internal development (see story). It has continued on the plan with several internal drug candidates under development, plus the GKA drug from Roche.

Hua released the following summary of results from the Phase Ia trial:

- ***Safety & Tolerability:*** total adverse events (AE) rate was identical vs. placebo with no relationship between AEs and incidence, types, intensity, or dose of drug. There were no severe AEs, deaths, or premature withdrawals due to AEs, and no significant laboratory, vital signs, or ECG abnormalities
- ***Pharmacokinetics:*** excellent linear correlation between drug dose and plasma exposure, dose-proportional AUC and Cmax across all 6 dose groups, no PK gender differences between male and female subjects, and no major metabolites were seen in plasma at the highest 50mg tested dose group
- ***Pharmacodynamics:*** dose proportional increases in post-meal insulin and GLP-1 levels notably above placebo post-meal hormone levels, validating GK's pancreatic mechanism of action; dose proportional decreases in fasting glucose without hypoglycemia or significant changes in other regulatory hormones suggesting GK's hepatic MOA via reduction in gluconeogenesis at fasting state.