Arecor completes JDRF-funded preclinical program for ultra-concentrated mealtime insulin - January 17, 2018

Arecor recently announced that preclinical studies of its ultra-concentrated (U1000) rapid-acting insulin have been completed. This preclinical program received JDRF funding (up to $900,000 over 12 months) in July 2016, and the candidate is now scheduled to enter in-human trials in people with type 1 diabetes in 2018.

Although no specific timeline was provided for phase 1 clinical development, Arecor stands to become the first company to advance a U1000 mealtime insulin into human trials.

Arecor has positioned this candidate for patients with insulin requirements >200 units daily, which remains an unmet need. Lilly's Humulin U500 (human insulin) is the highest-concentration rapid-acting insulin on the market today, and human insulin comes with its own limitations (most notably, greater hypoglycemia risk, and said to be challenging to use). Thermalin also has a U500 rapid-acting insulin in its preclinical pipeline; Sanofi recently invested in two unnamed candidates from the company. Additionally, Adocia is developing HinsBet U500, a preclinical stage BioChaperone human insulin.

Beyond helping patients with high insulin requirements, ultra-concentrated insulin also has potential applications in miniaturizing pumps and closed loop systems. Arecor's announcement highlights this step toward miniaturized technology, and we wonder if JDRF may invest further in the ultra-concentrated candidate to accelerate investigations in pumps and closed loop.

According to Arecor, onset time with this candidate is similar to currently-marketed rapid-acting insulin analogs. The company relies on proprietary Arestat technology to develop next-generation therapies for diabetes. Arecor's pipeline also features an ultra-rapid acting insulin (first in-human trials planned for 2018) and a liquid-stable glucagon (preclinical). Based on the company website, Arecor appears to have discontinued its preclinical biosimilar insulin glargine (Sanofi's Lantus), which was being developed (i) with improved thermostability, and (ii) as an ultra-long-acting basal formulation. Also apparently discontinued was Arecor's formulation of GLP-1 agonist liraglutide (Novo Nordisk's Victoza) with improved thermostability.

-- by Ann Carracher, Payal Marathe, and Kelly Close