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The study of Metformin Glycinate as a new treatment option in Mexican populations; *In vitro* and *In vivo* experience

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Metformin Glycinate (MG), it's a new molecule derived from Metformin, which has recently been studied and compared with reference therapy and shown to have a similar antihyperglycemic effect and a better bioavailability, absorption and safety profile. (1-3) Laboratorios Silanes has developed a new salt: MG, which has been tested in experimental animals and studies carried out in healthy volunteers and in patients with type 2 diabetes, including patients infected with SARS-CoV2. We present the findings of these studies. The results from the *in vitro* study demonstrated the effective inhibition of viral replication 48 hours after starting treatment with MG, without reports of any cytotoxic effect even with high doses. These results were confirmed by our clinical study, where patients with diabetes infected by SARS-CoV2, showed a lower oxygen requirement compared to control patients, due to a significant reduction in viral load just after 3.3 days of treatment. In order to demonstrate the oral bioavailability of MG compared to MH, a clinical study was carried out in healthy subjects under fasting conditions, observing a different pharmacokinetic profile for MG vs MH with a greater rate and degree of absorption for MG. A phase II clinical study was carried out, with the objective of determining the pharmacokinetic profile in an elderly population with T2DM (Type 2 Diabetes Mellitus), in order to know its effect in special populations. In this study, an adequate pharmacokinetic profile and safety of MG in elderly patients was confirmed, as there were no adverse events related to MG. This line of research continues, with the purpose of positioning MG as an innovative treatment which efficacy and safety have been proven through several studies.

Recent publications:

1. National Library of Medicine (U.S.). 2018. Metformin Glycinate on Metabolic Control and Inflammatory Mediators in Type 2 Diabetes (COMET). Identifier NCT01386671.
2. J. González-Canudas, Comet Group, 146-LB: Efficacy and Safety of Metformin Glycinate vs. Metformin Hydrochloride in Metabolic Control and Inflammatory Mediators in Type 2 Diabetes Mellitus Patients (T2DM), ADA (2019) 68.
3. Ventura-López C, Cervantes-Luevano K, Aguirre-Sánchez JS, Flores-Caballero JC, Alvarez-Delgado C, Bernaldez-Sarabia J, Sánchez-Campos N, Lugo-Sánchez LA, Rodríguez-Vázquez IC, Sander-Padilla JG, Romero-Antonio Y, Arguedas-Núñez MM, González-Canudas J, Licea-Navarro AF. Treatment with metformin glycinate reduces SARS-CoV-2 viral load: An *in vitro* model and randomized, double-blind, Phase IIb clinical trial. Biomed Pharmacother. 2022 Aug;152:113223.

Biography

Jorge Alejandro González Canudas is currently working as medical and clinical research director at Laboratorios Silanes, S.A. De C.V. in Mexico. He participated in research projects through public and/or private calls on the Development of a new molecule for the treatment of type 2 diabetes, Development of new combinations of drugs and supplements for a more effective and safe treatment for metabolic syndrome. He is the author of over 30 articles related to infectious diseases, microbiology, diabetes and cardiovascular and metabolic diseases. As well as author in various books, consensus and book chapters related to these topics.

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