A group sequential, adaptive phase 2/3 study to evaluate effects of BIO101, the Mas receptor activator, in severe COVID-19 patients

S. Agus[1], A. Azbekyan[1], W. Dioh[2], M. Chabane[2], C. Tourette[2], M. Latil[2], S. Veillet[2], S. Camelo[2], P. Dilda[2], T. Whitehouse[3], J. Mariani[4] and **R. Lafont[4]**

[1]Biophytis, USA

[2]Biophytis, France

[3]Queen Elizabeth Hospital Birmingham, UK

[4]Sorbonne University, France

Mechanism of Action: SARS-CoV-2 downregulates the protective arm of the renin angiotensin system including its components - ACE2/ Angiotensin 1-7/ Mas receptor. BIO101, a drug candidate with 20-hydroxyecdysone (20E) as the active pharmaceutical ingredient, activates Mas receptor.

Background: In an acute lung injury model, 20E attenuated the level of inflammatory biomarkers. BIO101 was also shown to be protective against muscle function loss in the animal models of ageing, disuse, and Duchenne muscular dystrophy (DMD). In a DMD model, BIO101 ameliorated respiratory function decline. Thus, BIO101 is a promising treatment candidate, for COVID-19 pneumonia.

Method: We report here the COVA trial protocol that aims to investigate safety and efficacy of BIO101 in SARS-CoV-2 pneumonia. COVA is a group sequential, adaptive, phase 2/3 study. Adults ≥45-year-old with confirmed COVID-19 pneumonia requiring hospitalization and with evidence of respiratory decompensation: tachypnea and SpO2 ≤92% are randomized to placebo or BIO101 (350mg BID) for up to 28-day treatment. Part I evaluates BIO101 safety and tolerability (50 participants) and part II proof of efficacy (addition of up to 310 participants). The primary end point is the proportion of 'negative' events: all-cause mortality and respiratory deterioration requiring high-flow oxygen, mechanical ventilation or extracorporeal membrane oxygenation. Sample size and futility assessment will be evaluated halfway through part II during the interim analysis.

Conclusion: Targeting of Mas receptor makes BIO101 a potential treatment for respiratory failure in COVID-19 pneumonia. Group sequential and adaptive design will allow to reduce the number of exposed participants and the need for repeated studies.

Biography

S. Agus presently working at Biophytisin USA.