

A microscopic image showing several large, spherical, orange-red bacteria with a textured surface, surrounded by smaller, purple, rod-shaped bacteria. The background is dark.

New challenges of sexually transmitted diseases

For decades, medical and scientific investigations in the area of sexually transmitted diseases focused their attentions on the treatment and survival of individuals infected by the human immunodeficiency virus (HIV).

However, due to changes in the sexual conduct of new generations and to the resistance of some bacterial strains to antibiotics, there are now pathologies that have increased in prevalence at alarming rates. Such is the case with gonorrhea, a disease caused by the bacterium *Neisseria gonorrhoeae*, where infected females present nearly no symptoms, making diagnosis difficult.

In this regard, a group of scientists and academics from the Center of Integrative Medicine and Innovative Science (CIMIS) at the Universidad Andrés Bello are searching for a solution to increased infection. Under the guidance of Dr. Luis Velásquez, Center Director, and Dr. Paula Rodas, this group is studying the way in which *N. gonorrhoeae* acts on the epithelium of fallopian tubes in females. The final goal is to develop new therapies to fight against this disease.

Dr. Paula Rodas explains that the greatest difficulty if the early diagnosis and treatment of this bacterium is that "*Neisseria gonorrhoeae* is like a chameleon; the expression of bacterial molecules changes according to the organ attacked, thus making it tough to predict behavior. Indeed, this ability has made it impossible to generate an effective vaccine."

Due to this, the UNAB investigator highlights that during the first stage of research, the goal of CIMIS is "to define the behavior of this bacterium on a molecular level. Moreover, we aim to determine which proteins generated by this bacterium produce determined effects."

"Once we know how the bacterium functions, we can begin searching for new pharmacological targets that will allow us to attack and eliminate bacterial proteins and, ultimately, the bacterium itself," adds Dr. Rodas.

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