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KLK3 as a possible novel early biomarker of environmental exposure in young women living in Polluted area (EcoFoodFertility project)

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Bisphenols and phthalates affect androgen receptor-mediated signaling that directly regulates Kallikrein-Related serine Peptidase 3 (KLK3) secretion, indicating that environmental factors may play a role in KLK3 secretion. With the aim of obtaining preliminary data on whether KLK3 could serve as an early marker of environmental pollution effects, in 61 and 58 healthy women living in a high environmental impact (HEI) and low environmental impact (LEI) area, respectively, serum KLK3 levels at different phases of menstrual cycle were measured.

KLK3 values resulted in always being higher in the HEI group with respect to the LEI group. These differences were particularly relevant in the ovulatory phase (cycle day 12°–13°) of the menstrual cycle. The differences in KLK3 values during the three phases of the menstrual cycle were significant in the LEI group differently from the HEI group. In addition, higher progesterone levels were observed in the

LEI group with respect to the HEI group in the luteal phase, indicating an opposite trend of KLK3 and progesterone in this phase of the menstrual cycle. Although changes in KLK3 could also depend on other factors, these preliminary data could be an early indication of an expanding study of the role of biomarkers in assessing early environmental effects for female reproductive health.

Speaker Biography

Mariacira Gentile is basic researcher in the research sector of the Gentile laboratory. Before starting her career as a molecular biologist she graduated with honors from the Federico II University in 2018. For over 5 years she has been involved in a lots of research projects in the field of male and female fertility but above all with the consequences of the environmental impact on reproductive health in the combination of environmental impact and reproductive health. She, also, is a basic researcher for the Ecofood fertility project.

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