

Poster Session II (7/7)

Reproductive Physiology

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HPV infection inhibits aquaporin-mediated hydrogen peroxide elimination and affects human sperm function

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Aquaporins (AQPs) 3, 7, 8, and 11 are expressed in human sperm cells and are localized in the plasma membrane and in intracellular structures. AQPs are involved in cell volume regulation, cytoplasm removal during sperm maturation and ROS (H₂O₂) elimination. Recently, AQP-mediated H₂O₂ permeability was found to be reduced by oxidative stress and related to a decrease in sperm number and motility. We studied the possible effect of Human Papillomavirus (HPV) on the expression and function of AQPs in human sperm cells of patients undergoing infertile couple evaluation. ELISA experiments showed that HPV infection is associated to an increased AQPs expression in normospermic patients and to a decreased one in sub-fertile patients. Functional experiments demonstrated that HPV infection heavily reduces water permeability of sperm cells of both normospermic and sub-fertile patients. Confocal IF experiments showed colocalization of HPV L1 protein with AQP8. Docking of HPV L1 and AQP8 atomic models suggested a distant effect of L1 on the pore NPA region. Present findings suggest that HPV infection affects AQPs expression and directly inhibits their function, probably by making sperm cells more sensitive to oxidative stress

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Evaluation of the association between dietary pattern and fat distribution in pregnant women

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Pregnancy represents a very delicate physiological moment. An excessive increase in weight during pregnancy, as well as a condition of obesity or overweight before pregnancy, exposes the woman to a greater risk of pregnancy complications and affects the risk of developing atherosclerosis, hypertension and insulin resistance during child's life. We aimed to monitor the association of specific dietary changes and modification in fat distribution weight during gestation and after childbirth. The project includes 2 frontal and interactive group meetings focused on proper nutrition in pregnancy and how to turn food advice into a practical and fast culinary experience, and 3 individual meetings at the 36th gestational week, at 6 and 12 months after birth. Weight, skinfolds, circumferences and mediterranean food questionnaires (MedScore) were measured at every meeting. To date, 49 women have voluntarily joined the program (35.0±4.2 y). On average, the sample was in the second quarter (21.5±7.8 w). 73.5% of the sample was primiparous, 19.2% with a before-pregnancy condition of overweight or obesity. At baseline (T0), 20% were adherent to the Mediterranean Diet; at the 36th week 64.7% improved its MedScore compared to T0 and the weight trend was adequate in 91.8% of the sample without association with fat distribution. The 59.2% was reviewed 6 months after childbirth: 64.3% of this recovered the before-pregnancy weight. We analysed the relationship of specific changes in MedScore subcutaneous fat distribution but we could not find significant association with this preliminary dataset. However, education program seems to be an effective prevention strategy in the control of body weight during pregnancy as well as after child birth.

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Can irisin change partner preference of female rats?

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The partner preference and active investigation paradigms are used to investigate and quantify sexual motivation in female rats. Partner preference (sexually active male or incentive female) and active interest to sexual partner of females are measured as duration of time in these tests. Although it is known that moderate-intensity exercise has positive effects on sexual function, the effects of irisin, an exercise hormone, on sexual motivation is unknown. The purpose of the present study is to evaluate the effects of irisin on appetitive aspects of sexual behavior in female rats. Totally 24 female Sprague-Dawley rats (21 days old