

O14

### Weight loss related hypothalamic amenorrhea is not associated with increased arterial stiffness

Adam Czyzyk<sup>1,\*</sup>, Tomasz Krauze<sup>2</sup>, Andrzej Minczykowski<sup>2</sup>, Andrzej Wykretowicz<sup>2</sup>, Agnieszka Podfigurna-Stopa<sup>1</sup>, Blazej Meczekalski<sup>1</sup>

<sup>1</sup> Poznan University of Medical Sciences, Department of Gynecological Endocrinology, Poznan, Poland

<sup>2</sup> Poznan University of Medical Sciences, Department of Cardiology-Intensive Therapy, Poznan, Poland

**Background:** Weight loss related functional hypothalamic amenorrhea (WL-FHA) is related to profound hypoestrogenism related to impaired hypothalamus function. Even though it is known that hypoestrogenism is linked to impaired cardiovascular system (CVS) function, it is not known how WL-FHA influences CVS. The purpose of this study was to assess the arterial stiffness in patients with WL-FHA.

**Methods:** 36 women (aged 24 ± 6 years) and 18 healthy controls (25 ± 5 years) were included to the study. In each case we performed detail physical and biochemical tests, including anthropometric measurements, body composition, hormonal concentrations and metabolic profile. The arterial stiffness has been assessed using peripheral arterial tonometry and pulse wave analysis. The central pulse pressure (CPP), central augmentation pressure (CAP) and index (CAI) are known surrogates of CVS disease.

**Results:** Women with WL-FHA presented lower values of CPP (26.4 ± 4.9 mmHg) and CAP (3.0 ± 3.3 mmHg) in comparison to healthy controls (CPP 31.2 ± 6.8,  $p = 0.008$ ; CAP 5.5 ± 3.4,  $p = 0.03$ ). The parameters of arterial stiffness were not correlated with sex-hormones concentrations, but in WL-FHA were positively correlated with insulin-resistance (HOMA-IR) and insulin concentrations.

**Conclusions:** In WL-FHA patients, opposite to perimenopausal women, the hypoestrogenism of hypothalamic origin is not related to increased CVD risk. The most probable cause of lower arterial stiffness is increased insulin-sensitivity in WL-FHA.

<http://dx.doi.org/10.1016/j.maturitas.2015.02.099>

O15

### Effects of estrogen, progesterone and estrogen plus progesterone administration in central and peripheral brain-derived neurotrophic factor in female ovariectomized (ovx) rats

Andrea Giannini\*, Paolo Mannella, Eleonora Russo, Andrea R. Genazzani, Tommaso Simoncini

Department of Clinical and Experimental Medicine, University of Pisa, Pisa, Italy

**Introduction:** There is increasing experimental evidence that estrogen plus progesterone combination therapy negatively affects cognition, while estrogen alone does not. Preclinical data suggest that progesterone supplementation is detrimental to cognition in ovx rats and that there is an interaction between progesterone and estradiol which positively influences cognitive performance. We hypothesize that progesterone can influence estrogen effects, altering the status of neural variables involved in neuroendocrine setting. We focused on brain-derived neurotrophic factor (BDNF), which is a neurotrophin involved in several neurobiological processes. Experimental evidences on rodents show that estrogen

restores BDNF levels after gonadectomy in some brain areas and in plasma.

**Aim:** To investigate the effects of estrogen, progesterone and co-administration of estrogen plus progesterone on central and peripheral BDNF modifications, in ovx rats.

**Method:** We studied the effects of hormonal therapy using E<sub>2</sub>V (0.05 mg/kg/per day) P (1 or 10 mg/kg/per day) or P (1 or 10 mg/kg/per day) plus E<sub>2</sub>V (0.05 mg/kg/per day) on central and peripheral BDNF in 40 female ovx rats compared with fertile controls.

**Results:** E<sub>2</sub>V treatment significantly ( $p < 0.001$ ) increases BDNF levels in all the analyzed areas and in plasma, progesterone is active on BDNF levels in all analysed areas and in plasma but when co-administrated with E<sub>2</sub>V reduces the effects of E<sub>2</sub>V alone markedly in the hypothalamus ( $p < 0.05$ ) and in the hippocampus ( $p < 0.05$ ).

**Conclusion:** Our findings suggest that female ovx brain is responsive to estrogen in cognitive regions, and that progesterone can reverse these estrogen effects thus confirming some experimental and neurobiological evidences from animal studies that progesterone can counteract estrogen effects in brain areas related to learning and memory and involved in neuroendocrine homeostasis.

<http://dx.doi.org/10.1016/j.maturitas.2015.02.100>

O16

### Robotically assisted laparoscopic repair of anterior vaginal wall and uterine prolapse by lateral suspension with mesh: our experience

Eleonora Russo\*, Paolo Mannella, Andrea Giannini, Tommaso Simoncini

University of Pisa, Department of Clinical and Experimental Medicine, Pisa, Italy

**Background:** Female pelvic floor is a complex functional unit involved in multiple functions that extend beyond the sole support of pelvic organs. Pelvic floor dysfunction globally affects micturition, defecation and sexual activity. Different than in males, the female pelvic floor undergoes a number of adaptive changes related to life and endocrine events. Most of the clinical manifestations of these changes become apparent after menopause and throughout ageing in women. Approximately 11.1% of the cases with pelvic organ prolapse or urinary incontinence require surgical intervention.

**Objective:** To report our experience with a novel surgical technique of robotically assisted laparoscopic repair of POP by lateral suspension with mesh and uterine conservation using Da Vinci system and evaluate its efficacy.

**Methods:** A total of 31 consecutive patients of symptomatic anterior vaginal wall and uterine prolapse with POP-Q (pelvic organ prolapse quantification system) stage  $\geq 2$  and aged 59 (42–76) years were enrolled for this procedure from July 2014. In brief, uterus was suspended to anterior abdominal wall fascia using a non absorbable pre shaped mesh extraperitoneally under robotically assisted laparoscopic guidance. The outcomes of interest included total operative duration, estimated blood loss, surgical length of stay, POP-Q score change, quality of life questionnaire in pelvic floor distress (IIQ-7, Wexner score for constipation and fecal incontinence) and female sexual function index (FSFI). Follow-ups were scheduled at 1, 6 and for a small number of patients at 10–11 months. The surgical success was defined as both subjective cure and significant improvement of POP-Q.

**Results:** This procedure was performed successfully in all patients. Short term follow-up of our cases, showed that this