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Poster Presentations

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The effect of L-arginine on the menopausal estradiol

Lakzaei F¹, Karami M¹, Jalali Nadoushan MR².

1. Department of Biology, Faculty of Basic Sciences, Shahed University, Tehran, Iran.

2. Department of Pathology, Faculty of Medicine, Shahed University, Tehran, Iran.

Email: karami@shahed.ac.ir

Background: Menopause in women is associated with many complications such as hot flashes, osteoporosis, and infertility that most of them are related to the decrease of estrogen levels in this period. Treatment with high doses of estrogen is common but has side effects.

Objective: In this study, the effect of L-arginine administration on the level of this hormone in elderly rat was investigated.

Materials and Methods: Elderly Wistar rats were first studied with the help of Papanicolaou smear to identify the stage of female sexual cycle. If confirmed to have diestrus phase, the rats were randomly classified into the following groups: control (saline 1

mL/kg), intraperitoneally, and L-arginine dose groups (5, 25 and 50 mg/kg). They were injected saline or L-arginine over a period of at least three to nine days. At the end, the rats were anesthetized by intraperitoneally injection of ketamine 100 mg/kg and xylazine 20 mg/kg, and the blood samples were collected, and the estrogen levels were measured with enzyme-linked immunosorbent assay kit. The rats' ovaries and uteri were also biometrically examined and fixed in the formalin. They were stained by hematoxylin and eosin and the number of cysts in the ovaries were counted. The data were analyzed by the Analysis of variance (ANOVA).

Results: L-Arginine at all doses (5-25 mg/kg) during all injection periods from three to nine days significantly increased the estradiol levels, but prominently reduced the ovarian cysts at the lowest doses (5 mg/kg).

Conclusion: Low doses of estrogen over short periods of time can relieve menopausal problems in animal, including estrogen levels and ovarian status, and this may be due to the modulatory role of estrogen in the animal's natural processes.

Key words: Menopause, L-Arginine, Estradiol level, Rat.