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**Nitric oxide (NO) induced Histo-morphological changes in the rat ovary**Hamzeiy H.<sup>1\*</sup>, Ghaderi A.<sup>2</sup>, Eghbal M.A.<sup>3</sup><sup>1,3</sup> Research Center for Pharmaceutical Nanotechnology, Faculty of Pharmacy, Tabriz University of Medical Sciences,<sup>2</sup> Department of Zoology, Payamnoor University of Ardebil

Received: 2006/12/17 , Accepted: 2007/4/18

**Objectives:** Considering nitric oxide (NO) as one of important molecular regulators in genital organs, we examined its effects on histo-morphologic changes in the rat ovary. **Methods:** 40 rats were divided in 5 groups of 8 upon observing vaginal plaque that has been considered as day zero of pregnancy. Control group, normal saline, L-NAME, L-Arginine and L-NAME + L-Arginine groups. Except the control group the remaining groups received normal saline (2 ml / kg / ip), L-NAME (20mg / kg / ip), L-Arginine (200 mg / kg / ip) and a mixture of the same doses of L NAME + L- Arginine, respectively on the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> days of pregnancy. On the 18<sup>th</sup> day of pregnancy the rats were anesthetized by diethyl ether and then paralyzed by cutting the spinal cord. After laparotomy the ovaries were fixed in 10% formalin and after tissue sample preparation, general (H + E) and specific (PAS) staining was performed. The histo-morphological changes were observed by optical microscopy and the necessary photographs were taken. **Results:** Degenerative changes and dissemination were observed in most parts of ovaries of L- Arginine group as well as reduction in growth and weight of the rats. Ovarian volume and number of corpus Luteum were also reduced in this group. **Conclusion:** It seems that NO induces inhibition of cell growth in the pregnancy period and can interfere with normal functions of the ovary.

**Key words:** Nitric oxide, ovary, Corpus Luteum, Rat.

NO :  
:  
(sham)  
(L-NAME + ) L-NAME  
(PAS) (H+E)  
L- Arginine  
NO :

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(sham) (NO) (NO synthase) (inducible) iNOS (endothelial) eNOS (neuronal) nNOS

(nitro-L-arginine methyl ester) L-NAME (L-NAME + ) NOS ( ) NOS ( )

(PAS Periodic Acid Schiff) (H+E eosion+hemaotoxylin) ( )

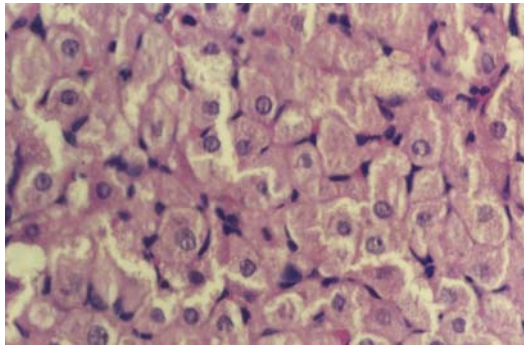
b a . (TV=4/3 ab<sup>2</sup>) ( )

(post hoc) ( ) F<sub>2α</sub> ( )

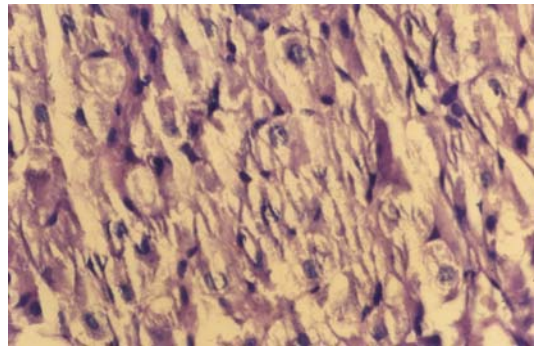
SPSS 12 ( )

(ZP) ( ) ( ) ( ) ( )

L-+ (L-NAME) (NAME)



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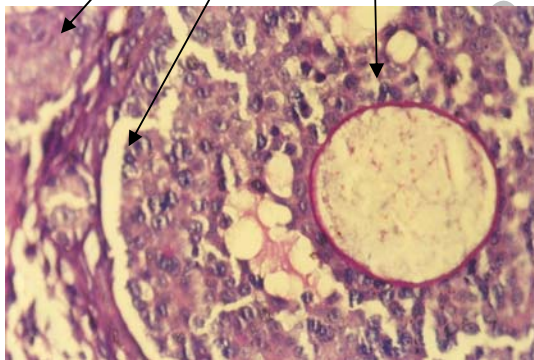
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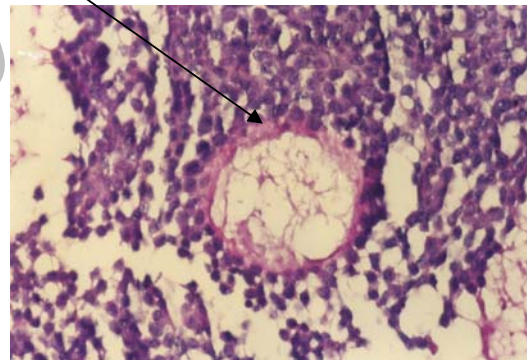
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**T G ZP**



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(T)

(G)

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( )

/ Tukey HSD

L-NAME L-Arginine

L-NAME + L-Arginine

L- L-Arginine

( )

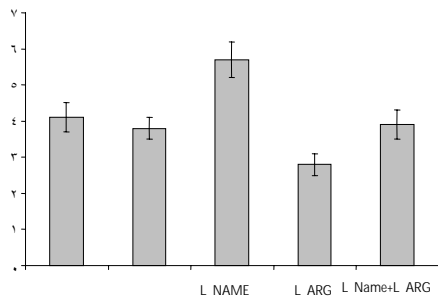
NAME

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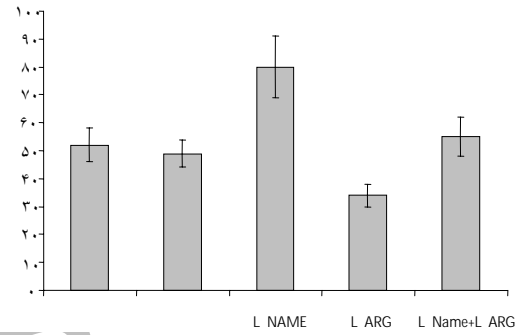
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Welch

Brown-Forsythe

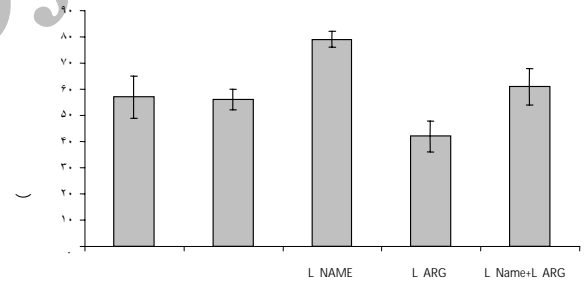


(n= ) mean±se



(n= ) mean±se

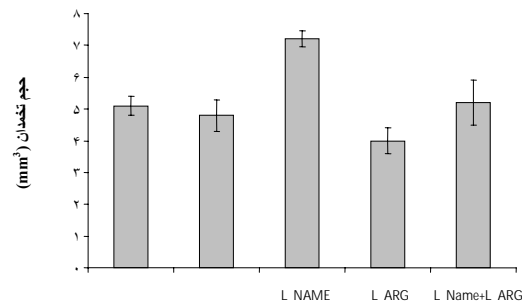
NO L-Arginine  
L-Arginine L-NAME + L-Arginine  
NO L-NAME  
L-Arginine



(n= ) mean±se

( )

L-NAME



(n= ) mean±se

L-NAME

(reactive oxygen species)

L-Arginine

NO

( )

( )

NO

NO

NO

L-NAME + L-Arginine

NO

( )

NO

NO

NO

NOS

( )

NO

## 6- References

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