The number of Sertoli and interstitial cells in all the experimental groups did not show a significant difference compared to the control group (Table 2).

Table 1: The mean serum LH, FSH, GnRH and testosterone levels in different groups of the experiment

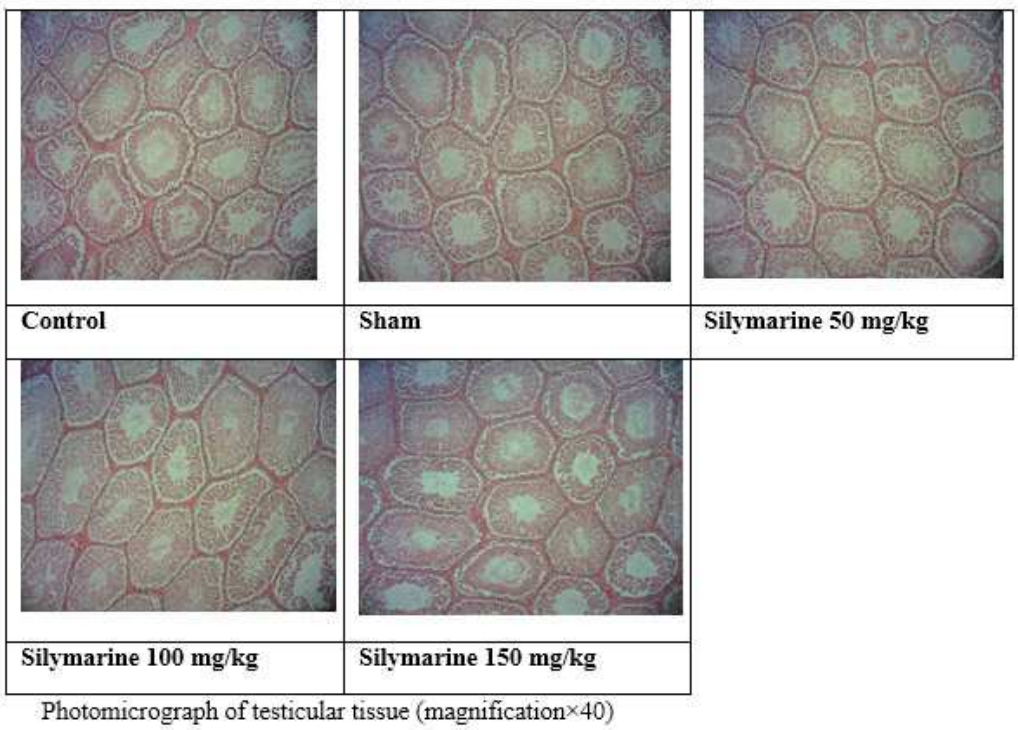
Groups Variables	Control	Sham	Silymarin (50 mg/kg)	Silymarin (100 mg/kg)	Silymarin (150 mg/kg)
GnRH (ng)	64.4±1.02a	65.2±1.98a	67±1.51a	69±2.34a	79±1.53b
FSH (ng)	9.34±0.83a	9.36±0.24a	9.86±0.93a	10.64±1.17ab	11.56±1.51b
LH (ng)	4.48±0.274a	4.48±0.222a	4.98±0.420a	5.38±0.493ab	6.40±0.628b
Testosterone (ng)	1.33±0.36a	1.35±0.025a	1.42±0.029a	1.56±0.038b	1.74±0.028c

According to Duncan test the means available in each row (Mean±SEM), which at least have one letter in common, do not have significant difference with each other at level of 5% of Duncan test.

Table 2: The mean number of seminiferous, Leydig and Sertoli cells in different groups of the experiment

Groups Variables	Control	Sham	Silymarin (50 mg/kg)	Silymarin (100 mg/kg)	Silymarin (150 mg/kg)
Spermatogonia cells	62.6±2.01a	61.4±2.35a	64.20±1.77a	62±3.30a	62.4±3.07a
Primary spermatocytes	61.8±1.01a	61.4±2.44a	65.2±1.74a	65.8±1.52a	66.2±1.52a
Secondary spermatocytes	112±2.77a	113.8±1.39a	123.6±1.69a	115±6.62a	123.8±3.78a
Spermatids	97.8±1.98a	95.2±4.14a	106.2±2.95ab	116.6±4.70b	135.4±4.16c
Spermatozoids	111.8±2.49a	110.8±3.02a	120.8±5.16ab	146.2±3.99b	163.8±1.74c
Sertoli cells	19.8±1.06a	19.8±1.24a	20.6±0.87a	22.2±0.37a	20.6±1.63a
Leydig cells	8.8±0.37a	8.8±0.66a	8.8±0.66a	9.4±0.40a	9.2±0.58a

According to Duncan test the means available in each row (Mean±SEM), which at least have one letter in common, do not have significant difference with each other at level of 5% of Duncan test.



Photomicrograph of testicular tissue (magnification×40)

DISCUSSION

Hypothalamic gonadotropin releasing hormone (GnRH) by influencing on the anterior pituitary gland increases the secretion of FSH and LH and thus stimulates the secretion of testosterone. Based on the results obtained in this study, simultaneous increase in serum levels of testosterone and LH, FSH and GnRH indicated the influence of silymarin on hypothalamus-pituitary-testis axis. Hypothalamus-pituitary-testis axis is affected by positive and negative control factors. Norepinephrine is one of the factors influencing the axis [15, 16]. It has been shown that silymarin have increased the concentration of norepinephrine, serotonin and dopamine in certain areas of the brain of laboratory white mice [17]. It seems in the current study that increase of gonadotropin hormones from pituitary gland is related to increased release of norepinephrine by silymarin. Norepinephrine by increasing the synthesis of