RESULTS

RESULTS

The current study included forty albino rats, in which the effect of electromagnetic field of 2G intensity on pituitary-gonadal axis was studied. The rats were classified into four groups.

Table 1, Figs. 3, 4 showed the results of FSH levels n various studied groups:

FSH level ranged between 0.07-0.09 Iu/ml with mean value of 0.082 ± 0.002 in control group, while it ranged between 0.08-0.160 Iu/ml with mean value of 0.11 ± 0.009 in the 2 weeks exposure group, FSH level ranged between 0.08-0.18 Iu/ml with mean value of 0.10 ± 0.013 while it ranged between 0.07-0.09 Iu/ml in the 4 weeks exposure group with mean value of 0.08 ± 0.003.

FSH level in one week exposure group showed significant ($P<0.05$) increase compared to control, while it showed significant ($P<0.05$) decrease in 4 weeks exposure group compared to the one week exposure group.

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum FSH hormone (IU / ml) levels of albino rats

Control	week	2 weeks	4 weeks
0.082±0.002	1±0.009	0.104±0.013	0.08±0.003
			NS
		NS	↓#
	↑*	NS	NS

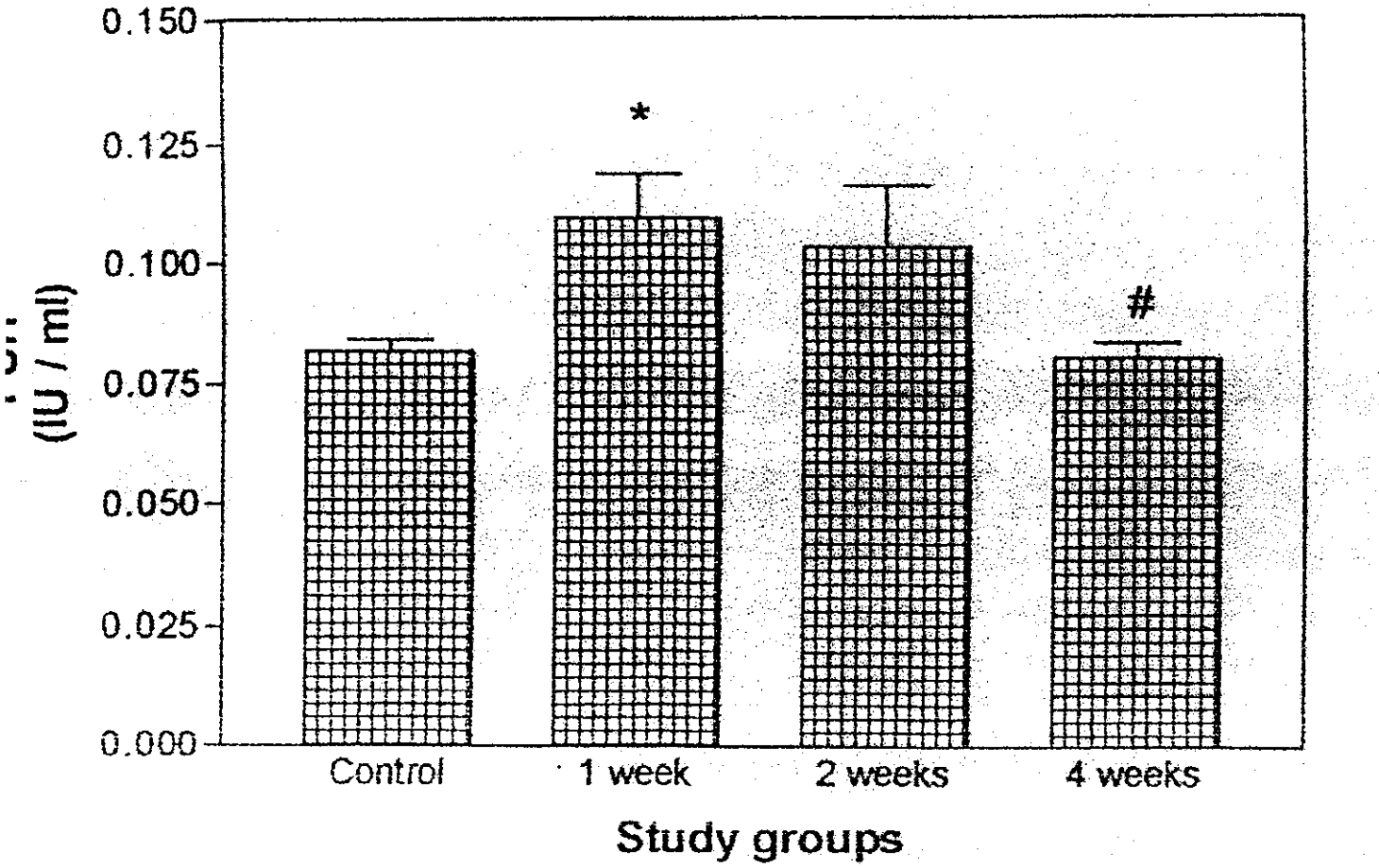
N = 10

* = Significantly ($p < 0.05$) differ than control.

= Significantly ($p < 0.05$) differ than 1 week exposure group.

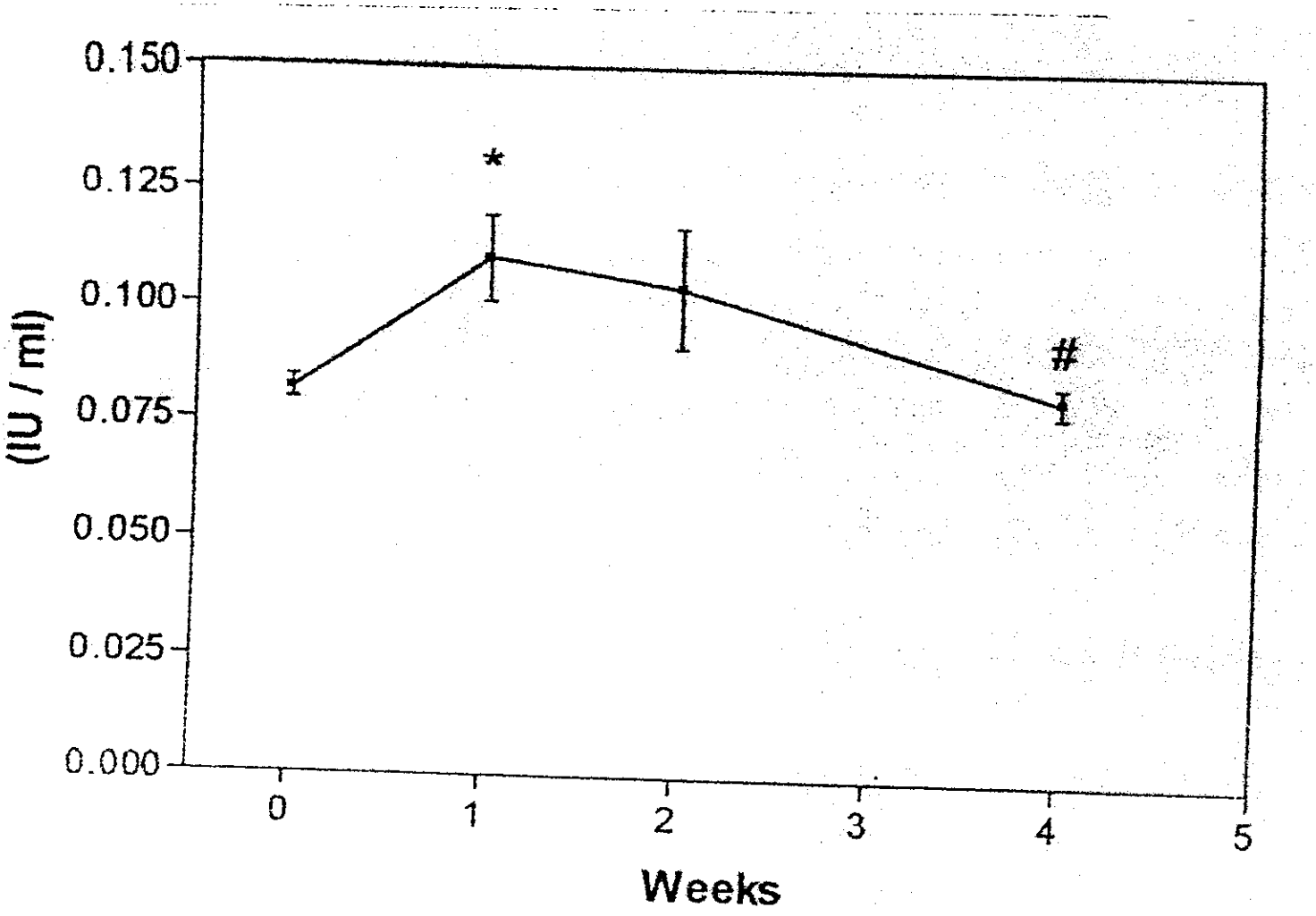
(Table 1)

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum FSH hormone (IU / ml) levels of albino rats



Graph : 3

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum FSH hormone (IU / ml) levels of albino rats



Graph : 4

Table 2 and Figs. 5 and 6 showed the results of LH levels in various studied groups:

In control group, it ranged between 0.55-0.65 Iu/l with mean value of 0.54 ± 0.019 while in 1 week exposure group, it ranged between 0.55-0.65 Iu/ml with mean value of 0.56 ± 0.019. 2 weeks exposure group showed LH level ranged between 0.45-0.65 Iu/ml with mean value of 0.57 ± 0.02 while in 4 weeks exposure group, it ranged between 0.55-0.80 Iu/ml with mean value of 0.65 ± 0.02.

The mean data in table 2 showed significantly ($P<0.05$) increase in LH level of 4 weeks exposure group than one week exposure group. Furthermore, it showed significantly ($P<0.05$) increase than 2 weeks exposure group while there were no significant changes with the control or one week exposed group.

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum LH hormone (IU / ml) levels of albino rats

Control	1 week	2 weeks	4 weeks
0.59±0.019	0.56±0.019	0.57±0.023	0.65±0.028
			↑♦
		NS	↑#
	NS	NS	NS

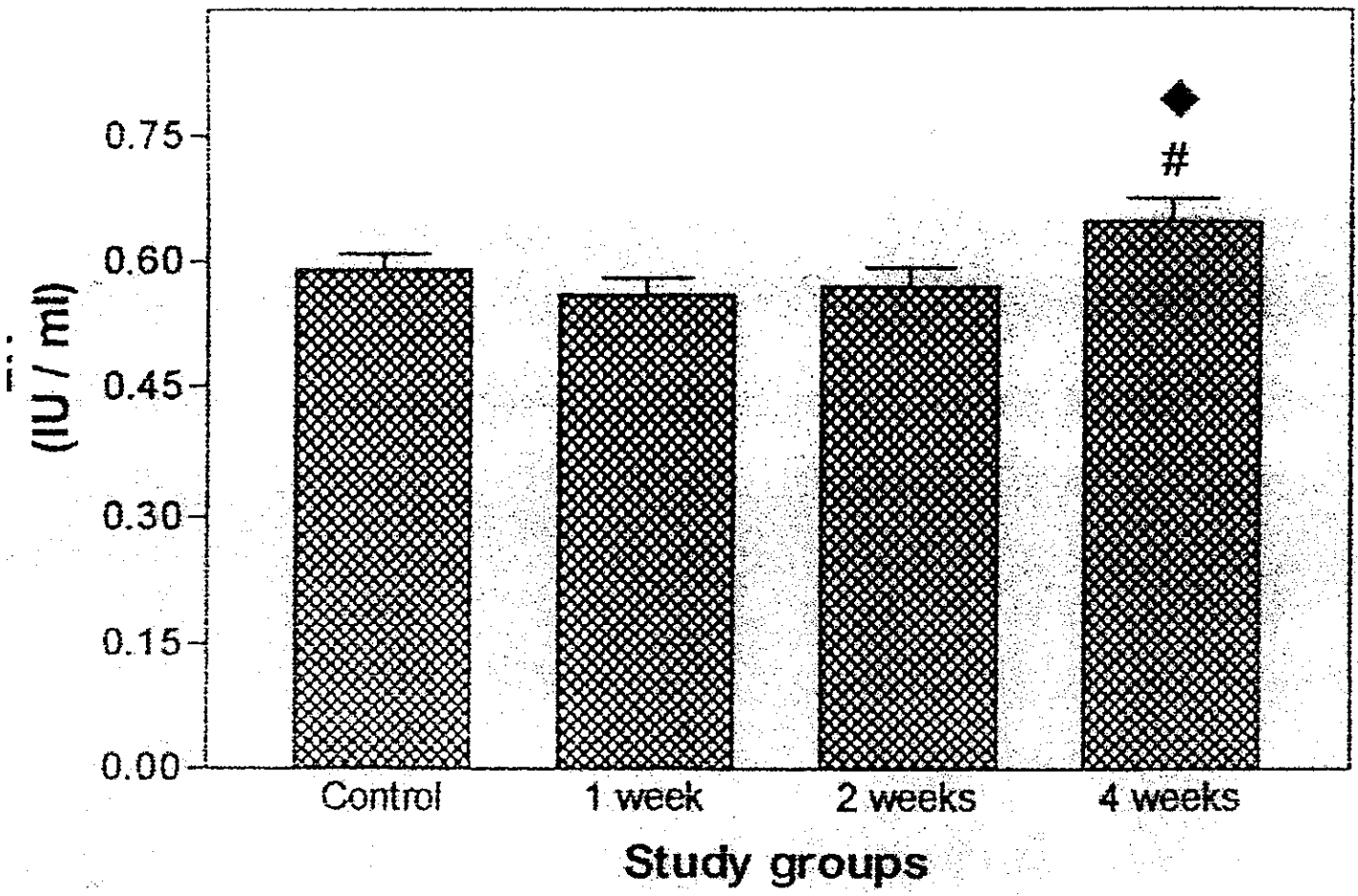
N = 10

= Significantly ($p < 0.05$) differ than 1 week exposure group.

♦ = Significantly ($p < 0.05$) differ than 2 weeks exposure group.

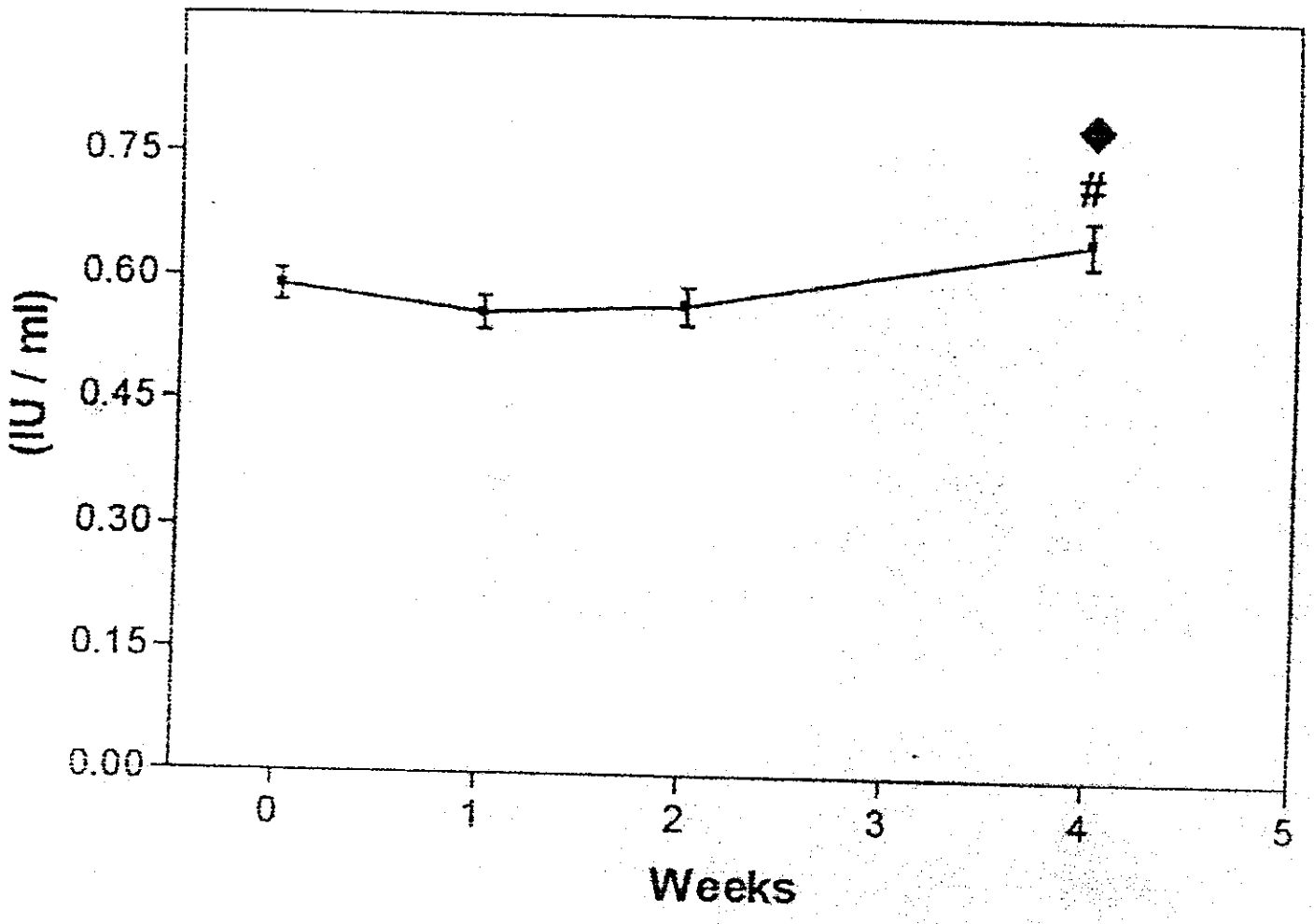
(Table 2)

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum LH hormone (IU / ml) levels of albino rats



Graph : 5

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum LH hormone (IU / ml) levels of albino rats



Graph : 6

Table 3, Figs. 7, 8 showed the results of Testosterone hormone levels in various studied groups:

In the control group, Testosterone hormone level ranged between 0.65-0.73 ng/ml with mean value of 0.67 ± 0.01 While in the one week exposure group, it ranged between 0.65-0.73 ng/ml with mean value of 0.65 ± 0.01. In the two weeks exposure group, the hormone level ranged between 0.60-0.73 ng/ml with mean value of 0.67 ± 0.01 and ranged between 0.60-0.73 ng/ml with mean value of 0.67 ± 0.01. As regards the comparison between the different studied groups, it was found that there was no significant ($P > 0.05$) changes.

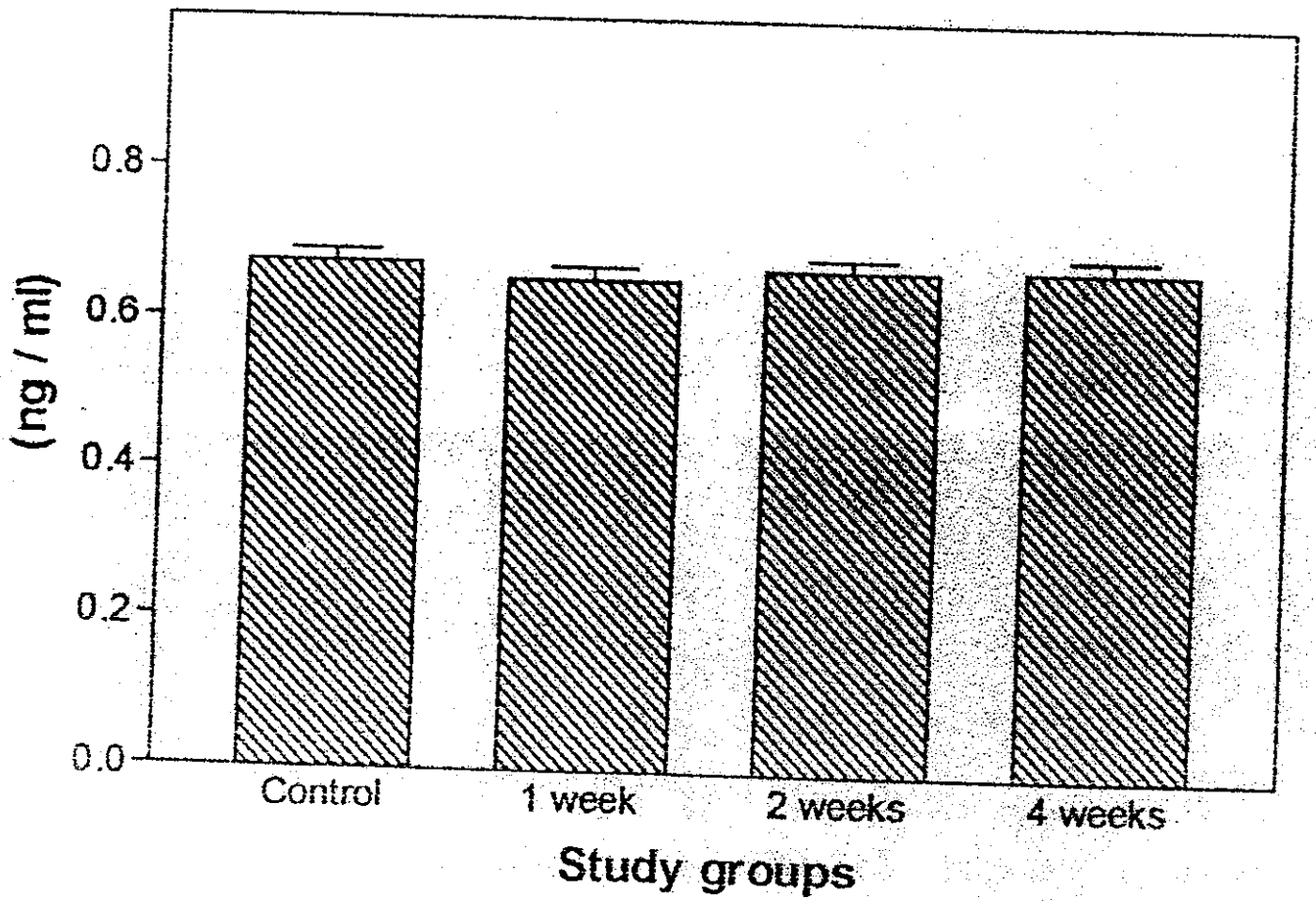
Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum Testosterone hormone (ng / ml) levels of albino rats

Control	1 week	2 weeks	4 weeks
0.676±0.015	0.656±0.017	0.672±0.15	0.676±0.015
			NS
		NS	NS
	NS	NS	NS

N = 10

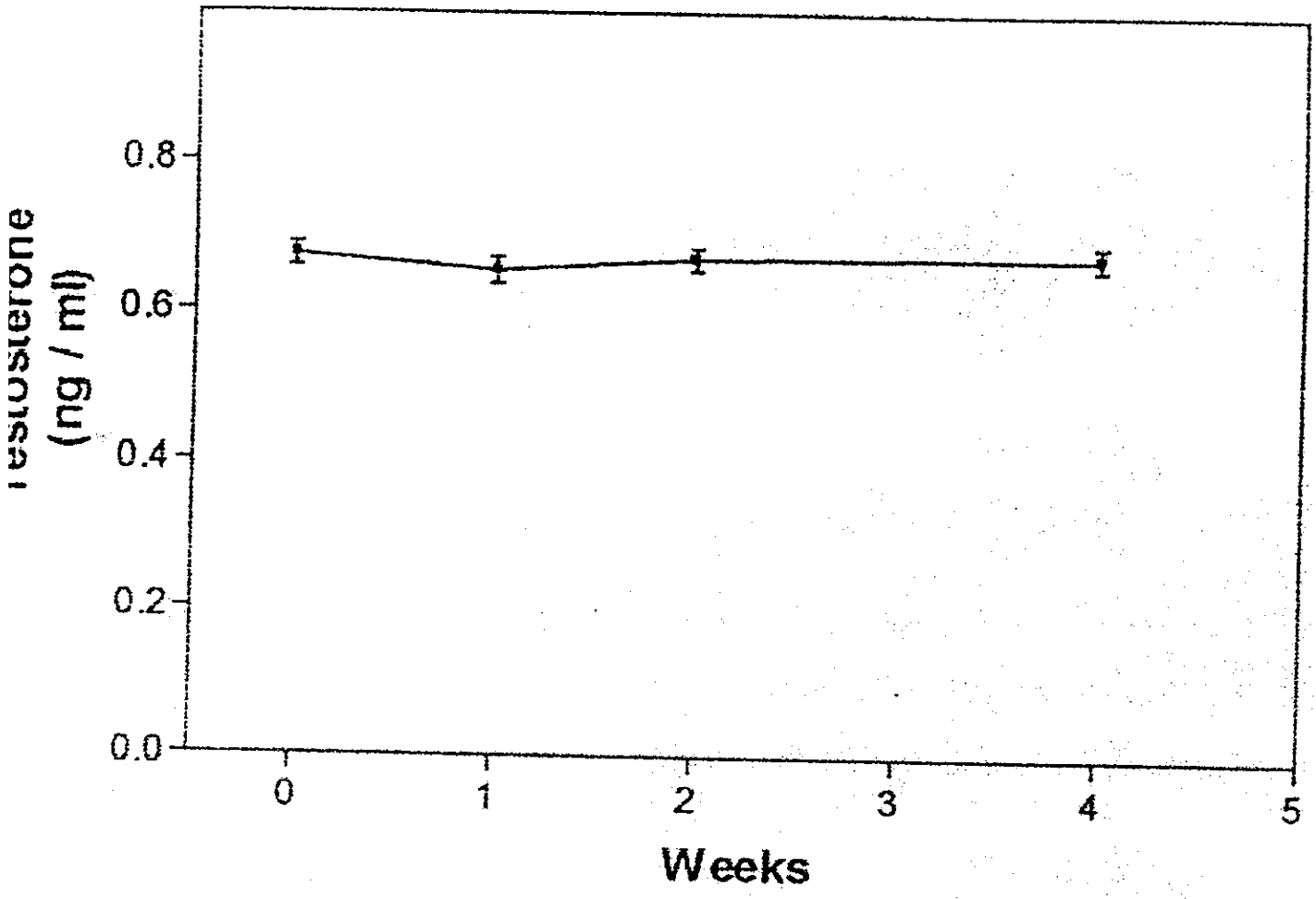
(Table 3)

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum Testosterone hormone (ng / ml) levels of albino rats



Graph : 7

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum Testosterone hormone (ng / ml) levels of albino rats



Graph : 8

Table 4 and Figs. 9 & 10 showed the results of prolactin hormone levels in different studied groups:

In the control group, prolactin hormone level range was between 0.57-0.70 ng/ml with mean value of 0.62 ± 0.14, while it ranged between 0.66-1.0 ng/ml in the one week exposed group with mean range of 0.77 ± 0.03. Prolactin hormone level ranged between 0.5-0.77 ng/ml in the 2 weeks exposed group with mean value of 0.6 ± 0.02 While in the 4 weeks exposed group, it ranged between 0.6-0.75 ng/ml with mean value of 0.67 ± 0.01.

Prolactin hormone level showed significant ($P < 0.05$) increase in the one week exposed group and the 4 weeks exposed group when compared to the control group while there was no significant ($P > 0.05$) change in the 2 weeks exposed group.

The hormone level showed also significant ($P < 0.05$) decrease in the 2 weeks and the 4 weeks exposed groups compared with the one week exposed group.

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum prolactin hormone (ng / ml) levels of albino rats

Control	1 week	2 weeks	4 weeks
0.622±0.014	0.774±0.038	0.608±0.028	0.674±0.017
			NS
		↓#	↓#
	↑*	NS	NS

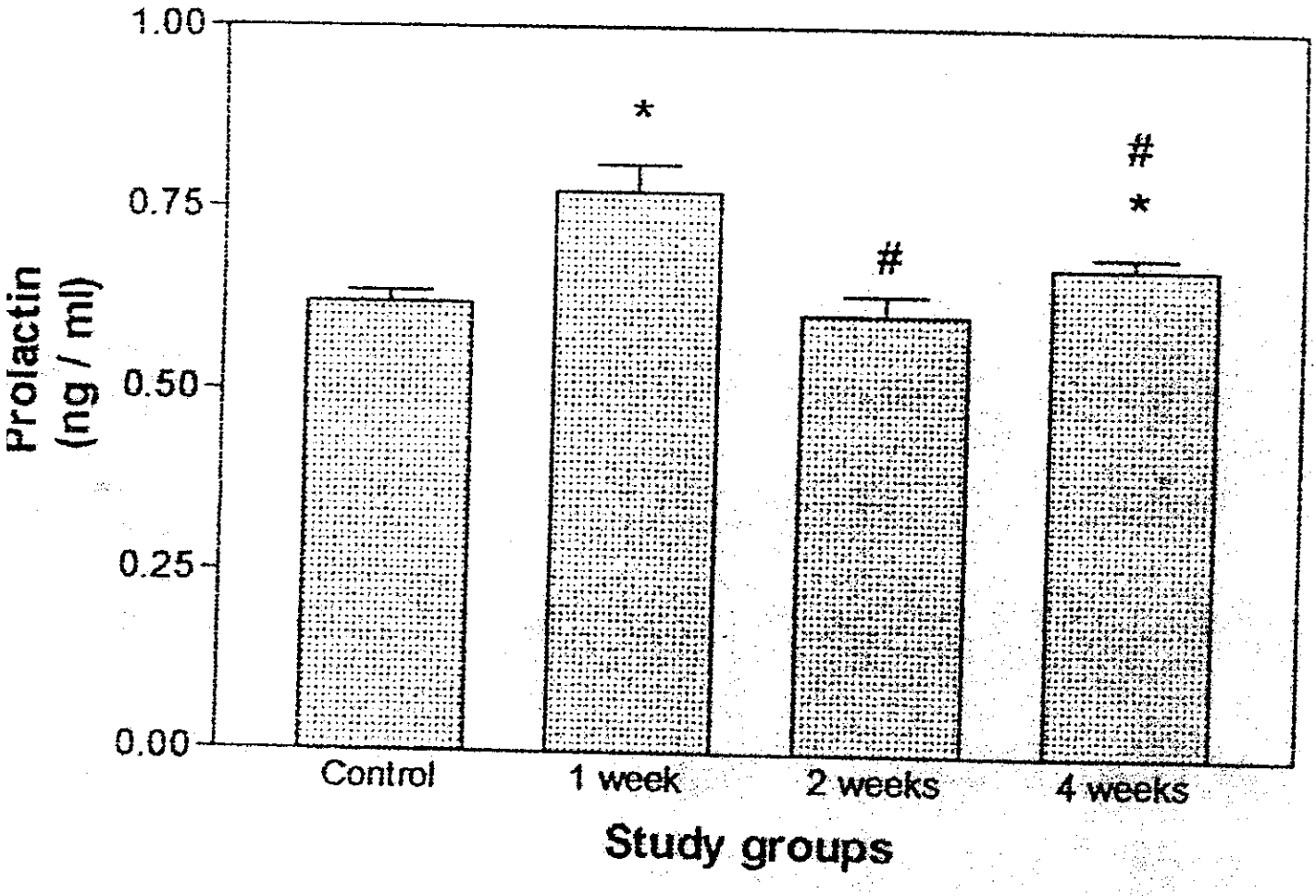
N = 10

* = Significantly ($p < 0.05$) differ than control.

 # = Significantly ($p < 0.05$) differ than 1 week exposurgroup.

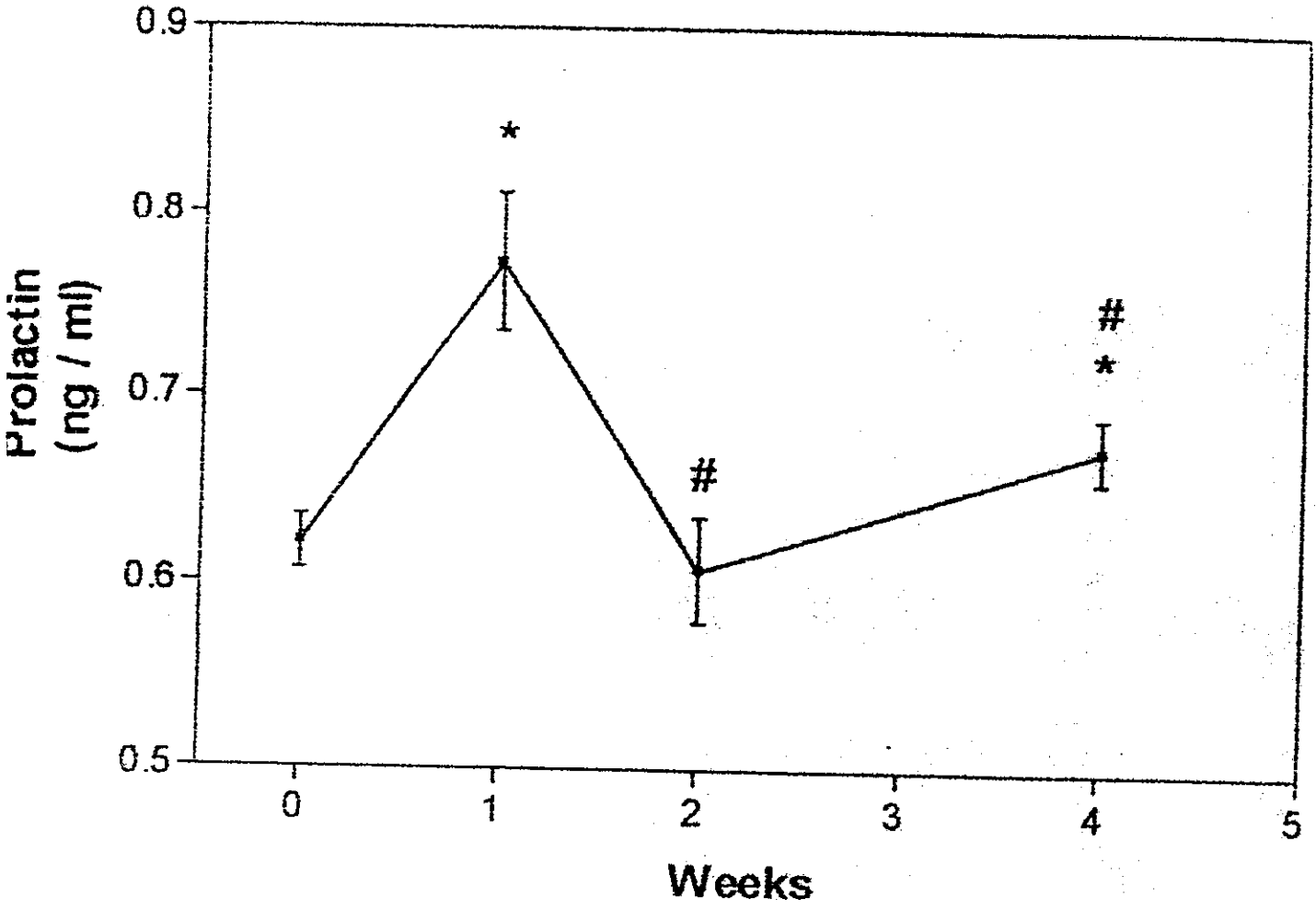
(Table 4)

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum prolactin hormone (ng / ml) levels of albino rats



Graph : 9

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum prolactin hormone (ng / ml) levels of albino rats



Graph : 10

Table 5 and Figs. 11 and 12 showed the results of cortisol hormone levels (ug/dl) in different studied groups:

Cortisol hormone level ranged between 0.80-0.95 ug/dl with mean value of 0.89 ± 0.01 in the control group while it ranged between 0.80-0.95 ug/dl in the one week exposed group. In the two weeks exposed group, its level ranged between 0.90-1.0 ug/dl with mean value of 0.94 ± 0.0 and ranged between 0.9-1.4 ug/dl with mean value of 1.03 ± 0.63 in the 4 weeks exposed group.

While the one week exposed group showed no significant ($P > 0.05$) difference with the control, the 2 weeks exposed group and the 4 weeks exposed group showed significant ($P < 0.05$) increase. Furthermore, showed also significantly ($P < 0.05$) increase when compared to the one week exposed group.

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum cortisol hormone (ng / dl) levels of albino rats

Control	1 week	2 weeks	4 weeks
0.89±0.019	0.88±0.017	0.94±0.013	1.03±0.063
			NS
		↑#	↑#
	NS	↑*	↑*

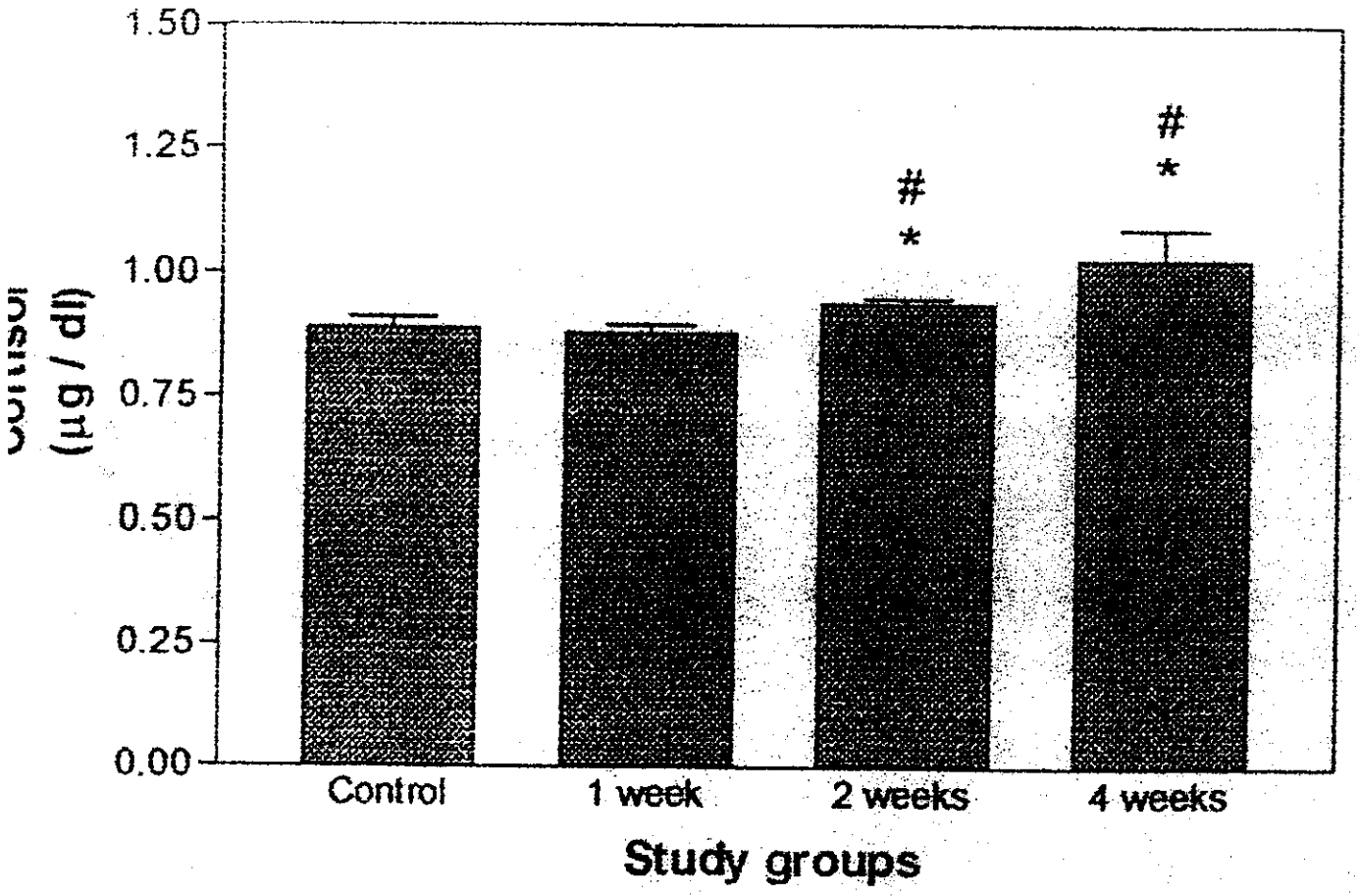
N = 10

* = Significantly ($p < 0.05$) differ than control.

 # = Significantly ($p < 0.05$) differ than 1 week exposurgroup.

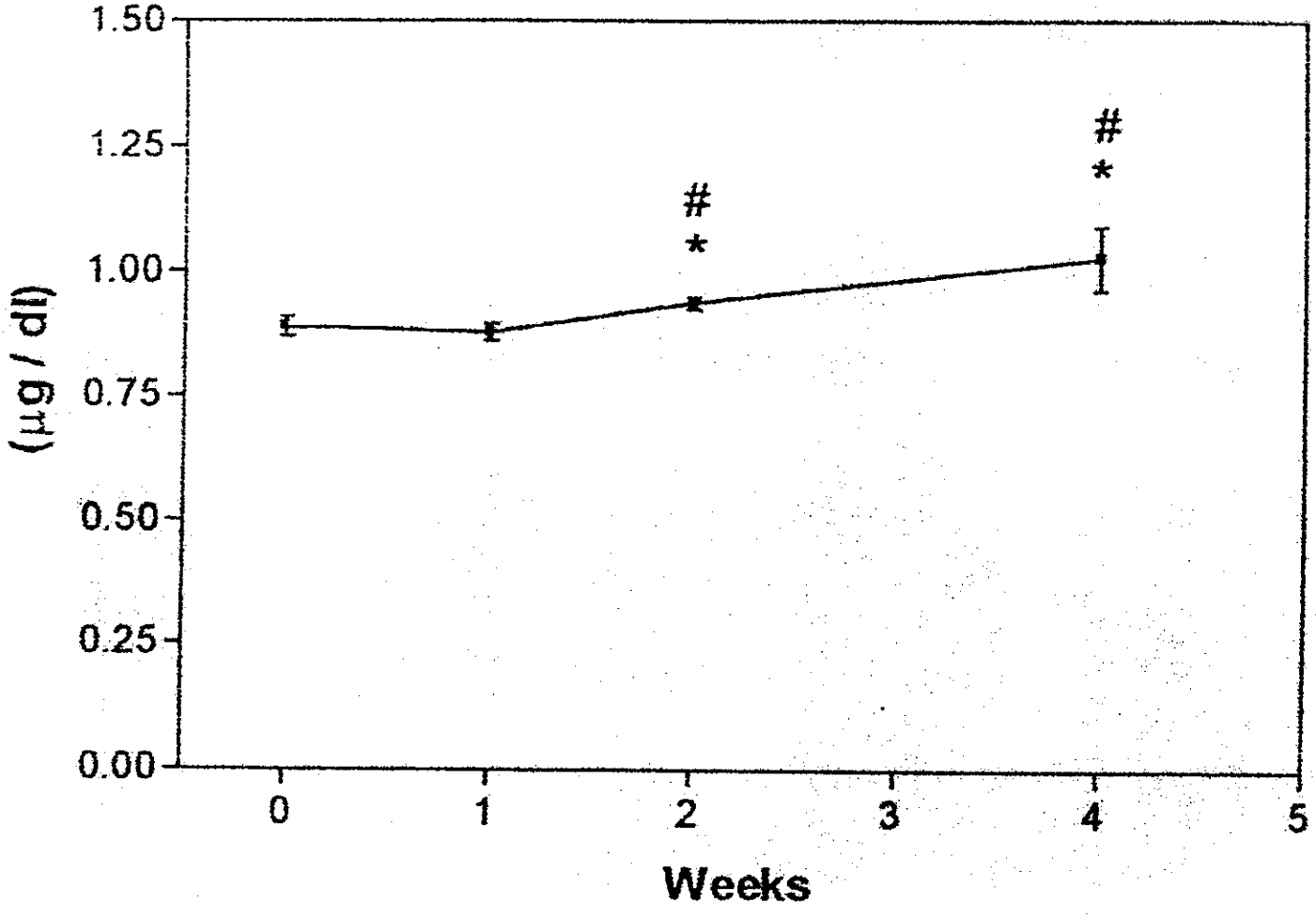
(Table 5)

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum cortisol (µg / dl) levels of albino rats



Graph : 11

Effect of (24 hr / day) exposure to (ELF EMF) of 2G intensity on serum cortisol (µg / dl) levels of albino rats



Graph : 12

Histopathological examination

Fig (G): Show normal spermatogenesis in cross sectional microscopic examination of the rat's testes stained with Hx and eosin in the group1 (control group). X 100

Fig (H): Show normal spermatogenesis in cross sectional microscopic examination of the rat's testes stained with Hx and eosin in group 2(7 days exposure).x 100

Fig (I): Show normal spermatogenesis in cross sectional microscopic examination of the rat's testes stained with Hx and eosin in group 3(15 days exposure). X 100

Fig (J): Show normal spermatogenesis in cross sectional microscopic examination of the rat's testes stained with Hx and eosin in group 4(30 days exposure). x 100

Figs.(G),(H),(I)and(J) show normal semineferous tubule, normal Sertoli cells with oval elongated prominent nuclei, normally large spermatogonia cells, normal spermatocytes and spermatids which are round and elongated into the lumen.

The histopathological examination of the rat's testes in the exposed groups revealed no significant changes in comparison to the control group.