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The Effects of Combination of Melatonin with and Without Zinc on Gonadotropin Hormones in Female Rats

Authors : Fariba Rahimi, Morteza Zendedel, Mohammad Jaafar Rezaee, Bita Vazir, Shahin Fakour

Abstract : The present study was carried out to investigate the effect of melatonin (Mel) with and without zinc (Zn) on the gonadotropin hormones, also thyroid (T3 and T4) hormone concentration in female rat. A total of 40 adult female rats were randomly grouped into five treatment groups, each of 2 rats in a Completely Randomized Design (CRD) entire research time. Daily were treated by gavaging with Zn and melatonin as following: T1 (control1, basal diet), T2 (control 2, treated with normal saline) and other experimental groups including T3, T4 and T5 were treated with dose of zinc (40 ppm), melatonin (5 mg/kg), and combination zinc plus melatonin with the same level, respectively. Blood FSH and LH concentration were measured. Result showed no significantly differences between treatments in FSH and LH levels. The estrogen and progesterone and TSH levels in rats that received 5 mg of melatonin per day were higher than other groups, but not statistically significant ($P>0.05$). However, T3 (thyroid) concentration significantly ($P<0.05$) decreased in group that received 40 mg/zinc per Kg compared other groups. No significant ($P>0.05$) difference was detected among treatments in T4 levels. In conclusion, except for T3, had not significantly ($P>0.05$) effect on another parameters in the female rats that received melatonin or zinc and blend of melatonin and Zn.

Keywords : zinc, melatonin, hormone, rat
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