SUMMARY

The aim of this study was to evaluate the effects of melatonin and Dexpanthenol addition to the estrogen therapy on antioxidant parameters in ovariectomized rats.

Fifty Wistar albino rats were used. Rats were ovariectomized under anesthesia twentyone days before the treatment except control group. Treatment was given for fourteen days. The rats were divided into seven groups. Control group(n=8) and overiectomized groups (n=7), treated as follows: Control group: received no treatment, (Ovx): ovariectomized group received no treatment, (Ovx+E_2): ovariectomized+ estradiol group received E_2 (100 µg/kg/day), (Ovx+E_2+MT5): Ovariectomized+ E_2 + Melatonin group received (5mg/kg/d) melatonin addition to estradiol. (Ovx+E_2+MT20): ovariectomized + E_2 + Melatonin group received (20 mg/kg/d) of melatonin addition to estradiol, (Ovx+E_2+Dex250): Ovariectomized+ E_2 + dexpanthenol group received (250 mg/kg/d) of dexpanthenol addition to estradiol. (Ovx+E2+Dex500) group received (500 mg/kg/d) of dexpanthenol addition to estradiol. Estradiol was given subcutaneously (SC), melatonin and dexpanthenol administered intraperitoneally (IP). Rats were decapitated on the fourteenth day.

Catalase (CAT), Superoxide dismutase (SOD), Glutathione (GSH), Glutathione peroxidase (GSH-Px), Glutathione reductase (GR), Malondialdehyde (MDA) and nitric oxide (NO) activities in blood were measured.

GSH levels were significantly lower in Ovx group compare to melatonin (5–20 mg/kg/d) and dexpanthenol (250-500 mg/kg/d) groups. Also in Ovx+ E_2 group GSH levels were significantly higher than Ovx group.

GR levels were significantly decreased in all treatment group compare to Control groups. GR levels were significantly lower in all other groups compare to Ovx group but Ovx+ E_2 and Ovx+ E_2+MT5. Comparison of GR levels in treatment groups, dexpanthenol receiving groups (250-500 mg/kg/d) were significantly lower than melatonin (5 mg/kg/d) receiving group. There were no significant differences between groups in SOD, CAT, Gpx and MDA. NO levels were significantly higher in Ovx+E2+MT20 and Ovx+ E_2+Dxp 250 group than ovx group.

Additional Melatonin and Dexpanthenol treatment, may increase beneficial effects of estrogen therapy via alteration of GSH levels and antioxidant enzyme levels.

Key Words: Estrogens, Ovariectomized rat, Oxidative stress, Dexpanthenol, Melatonin .

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