

THE POSSIBLE PROTECTIVE EFFECT OF VITAMIN E AND MELATONIN ON CYCLOPHOSPHAMIDE INDUCED OVARIAN FAILURE IN ADULT FEMALE BLACK MICE

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Results

Histological results:
Masson's Trichrome Stain:

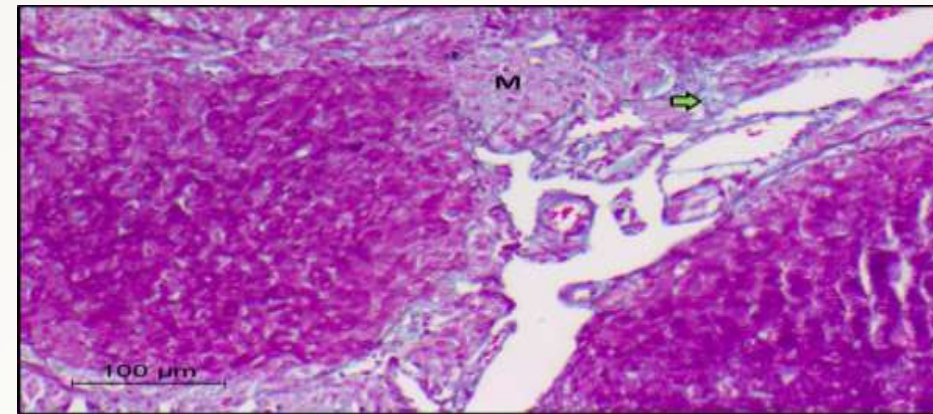


Figure 1: Light photomicrograph of section of mouse ovary of the control group (group I) showing scanty amount of collagen (green arrow) in the medulla (M). (Masson trichrome. x200).

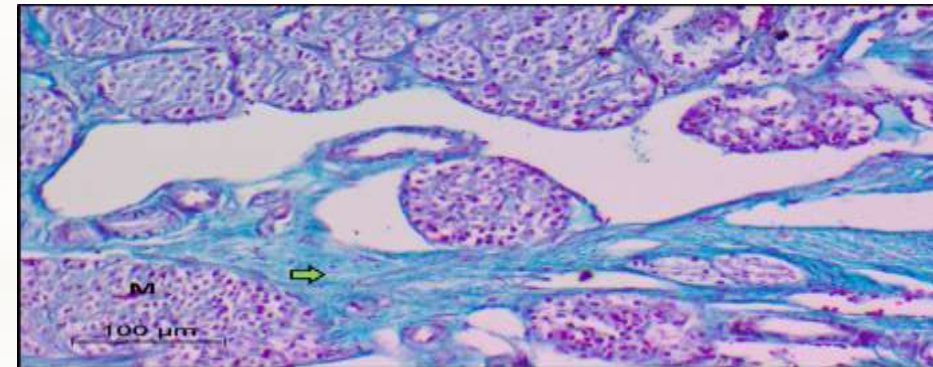


Figure 2: Light photomicrograph of section of mouse ovary of cyclophosphamide treated group (group II) showing extensive collagen deposition (green arrow) in the medulla (M). (Masson trichrome. x200).

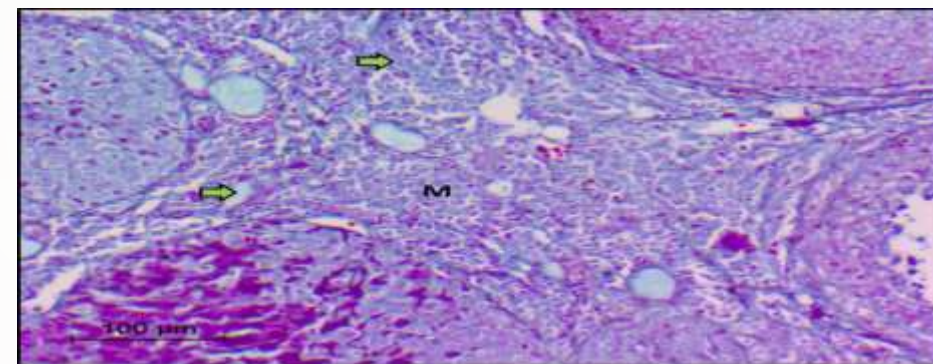


Figure 3: Light photomicrograph of section of mouse ovary of combined cyclophosphamide and vitamin E treated group (group III) showing moderate collagen deposition (green arrow) in medulla (M). (Masson trichrome. x200).

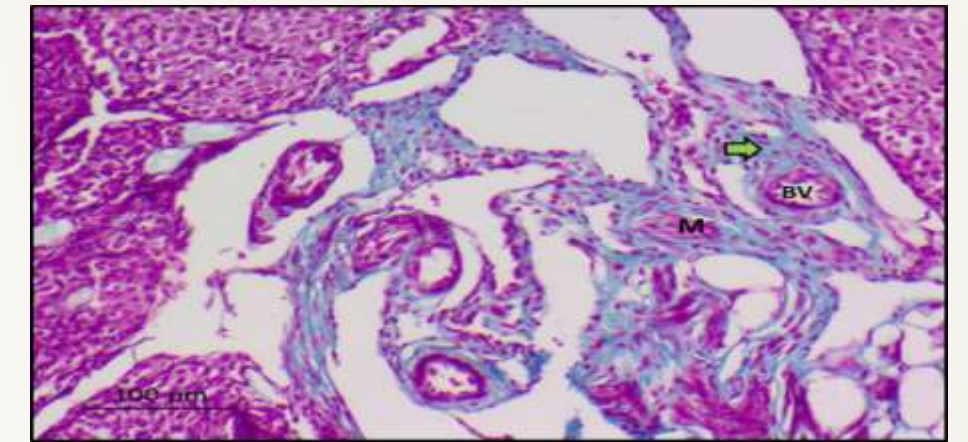


Figure 4: Light photomicrograph of section of mouse ovary of combined cyclophosphamide and melatonin treated group (group IV) showing moderate collagen deposition (green arrow) around blood vessels (BV) in the medulla (M). (Masson trichrome. x200).

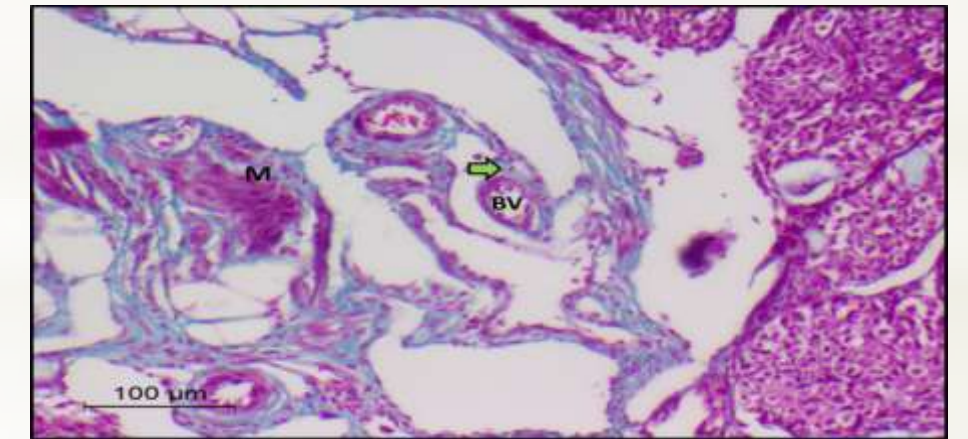


Figure 5: Light photomicrograph of section of mouse ovary of combined cyclophosphamide, vitamin E and melatonin treated group (group V) showing minimal collagen deposition (green arrow) in the medulla (M) around blood vessels (BV). (Masson trichrome. x200).

Introduction

Premature ovarian failure is a common condition and stands for cessation of the ovarian function in women before the age of 40 years. Amenorrhea is the common feature of premature ovarian failure. Cyclophosphamide has very toxic effect on the ovaries. It disrupts the follicular reserve with reduction in the number of dominant primordial follicles and accelerates follicular atresia by causing follicular apoptosis which causes ovarian dysfunction. Vitamin E works as a chain breaking antioxidant which protects membranes of cells. Exogenous melatonin pretreatment lowers oxidative stress caused by cyclophosphamide.

Aim of the work

The aim of this work was to study the potential protective role of vitamin E and / or melatonin on the ovarian structure in the ovarian failure induced by cyclophosphamide in adult female black mice.

Material and Methods

The study was carried out on 36 adult female black mice obtained from the Animal House Center, Anatomy department, Faculty of Medicine, Alexandria University. Mice were divided into 5 groups; **Group I:** (control group) 12 mice subdivided into 2 subgroups, each subgroup included 6 mice. **Group II:** 6 mice received cyclophosphamide (75 mg/kg/day, intraperitoneally, in the fifth, twelfth and nineteenth days of study). **Group III:** 6 mice received vitamin E (200 mg/kg/day, by orogastric tube (OT)), for 19 days concomitant with cyclophosphamide like group II. **Group IV:** 6 mice received melatonin (50 mg/kg/day, by OT), for 19 days concomitant with cyclophosphamide like group II. **Group V:** 6 mice received vitamin E and melatonin for 19 days concomitant with cyclophosphamide like group II. At the 26th day of study, ovaries were extracted and processed for histological examination.

Conclusion

Cyclophosphamide induces destruction in the ovarian tissue. Concomitant use of vitamin E and melatonin with cyclophosphamide helps to preserve the ovarian tissue compared to the use vitamin E or melatonin alone.