

Simultaneous evaluation of cyclophosphamide and aqueous extract of palm pollen in vitro fertilization on sperm quality and subsequent embryo development in Mice

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Abstract

Palm pollen is one of the traditional medicinal plants with potential antioxidant properties that is used to treat infertility. The aim of this study was to investigate the protective effects of palm pollen on the growth process of embryos obtained from laboratory fertilization following cyclophosphamide administration. In this experimental study, 36 NMRI male mice weighing approximately 36-30 g were randomly divided into 6 groups: after adapting to the environment for one week, all groups were treated daily for 28 days. The Groups included the control group, Cyclophosphamide, Cyclophosphamide with high and low dosages of palm pollen and two groups palm pollen alone, with high and low doses. Subsequently, weighing and necropsy were done, all animals were euthanized for stimulate ovulation using PMSG and HCG and 6 Adult fertile mice were used. Fertilization was assessed in HTF + 4mg BSA culture medium, fertilized eggs incubated for 120 hours. Embryonic developmental stages and intra-laboratory fertility rates in all groups were investigated. The results showed that the percentage of fertilized eggs, two-celled embryos, morula, blastocysts and the percentage of hatched embryos in Cyclophosphamide group decreased significantly compared to the control group. Cyclophosphamide and palm pollen group at high and low dosages, showed significant increase compared to Cyclophosphamide group. The Cyclophosphamide group had a significant increase in the percentage of stopped embryos compared to the control group. The percentage of stopped embryos in mice receiving the palm pollen at high and low dosages showed a significant decrease after Cyclophosphamide administration compared to Cyclophosphamide group. Palm pollen following Cyclophosphamide administration improved the growth process of embryos obtained from laboratory fertilization.

Keywords: Mice, Palm pollen, Cyclophosphamide, Laboratory fertilization

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