ABSTRACT

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Di(2-ethylhexyl) phthalate (DEHP) is a commonly encountered environmental endocrine disruptor due to its widespread use and may exert adverse effects on the male reproductive system. Silymarin, on the other hand, is a natural compound reported to possess strong antioxidant and cytoprotective properties that may protect against various toxic agents. In this study, the possible protective effects of silymarin against DEHP-induced reproductive toxicity in male BALB/c mice were investigated.

Adult male BALB/c mice were divided into Control, DMSO, DEHP, Silymarin, and DEHP+Silymarin groups. At the end of the study, body and organ weights, sperm count and morphology, and plasma levels of testosterone, follicle-stimulating hormone (FSH), and luteinizing hormone (LH) were evaluated. Furthermore, growth performance, survival rates, sex ratios, organ weights, sperm parameters, and hormone levels were assessed in F1 offspring.

The obtained results indicated that DEHP administration was associated with a decrease in sperm count, impaired sperm morphology, a tendency toward decreased testosterone levels, and reductions in litter size and survival rates. Decreased sperm quality and adverse changes in reproductive parameters were also observed in F1 offspring. However, silymarin administration partially alleviated DEHP-induced reproductive toxicity by improving sperm count, sperm morphology, and certain hormonal parameters.

In conclusion, silymarin may exert a partial protective effect against DEHP-induced male reproductive toxicity, and this effect may contribute to the attenuation of certain adverse alterations observed in subsequent generations.

Key Words: Silymarin, Di 2 etylhexyl phtalate, Balb/c, Reproduction, Endocrine disruptor.

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