Ameliorative Effects of Aquilaria malaccensis Leaves Aqueous Extract on Reproductive Toxicity Induced by Cyclophosphamide in Male Rats

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Abstract

Background: Cyclophosphamide (CP) is a widely used anti-neoplastic and immunosuppressive agent that is associated with adverse side effects including reproductive toxicity. Aquilaria malaccensis (AM) is a traditional medicinal plant which was reported to exhibit high anti-oxidant and free radical scavenging properties. The present study was aimed to evaluate the protective effects of AM leaves extract on sperm quality following toxic exposure to CP.

Methods: Forty-eight male Sprague Dawley rats were allocated into eight groups of six rats (n = 6): control, CP only (200 mg kg(-1)), AM only (100 mg kg(-1,) 300 mg kg(-1) and 500 mg kg(-1)) and CP + AM (100 mg kg(-1), 300 mg kg(-1) and 500 mg kg(-1)). Animals were sacrificed after 63 days of treatment and the sperm from the caudal epididymis was taken for sperm analysis.

Results: The body and the reproductive organs weight, sperm count and motility did not differ between CP and other groups ($P > 0.05$). A significant increase ($P < 0.05$) in percentage of the dead and abnormal sperm were seen in the CP alone treated group compared to the control group. Co-administration of AM to the CP exposed rats significantly reduced the ($P < 0.05$) percentage of abnormal sperm as compared to the CP only group.

Conclusion: Overall, the present results represent the potential of AM to protect against CP induced reproductive toxicity.

Keywords

Author Keywords: antioxidants; Aquilaria malaccensis; cyclophosphamide; oxidative stress; reproductive toxicity
KeyWords Plus: ALPHA-LIPOIC ACID; OXIDATIVE STRESS; SPERM MORPHOLOGY; TESTICULAR TOXICITY; DAMAGE; CHEMOTHERAPY; MECHANISMS; THYMELAEACEAE; HISTOLOGY; ACROLEIN

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