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Sperm parameters and histology of testis of rats administrated with traditional herbal formula Palakalyana Ghrita

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Introduction: Palakalyana Ghrita (PKG) is an herbal medicine used by traditional medical practitioners in Sri Lanka, to treat both partners of couples seeking infertility treatment. The aim of this study was to determine the effect of orally administered PKG on the reproductive system of adult male Sprague Dawley rats.

Methodology: Eighteen rats were divided into three groups (n=6/group). Groups 1 and 2 received daily PKG gavages containing 900 mg and 1800 mg/kg body weight respectively, for 12 weeks. The control group, group 3 received only distilled water. After the period of treatment rats in control and test groups were weighed and a sample of blood was collected for testosterone assay. Rats were then sacrificed, and male reproductive organs were dissected out. Sperms were collected from cauda epididymis into warm Fertilcult medium for sperm analysis. Total motile sperm concentration and sperm morphology were assessed as per WHO criteria. The testis of all rats was weighed and submitted for histopathological assessment.

Results: After 12 weeks of the treatment, mean body weight of the group 2 animals was significantly higher (252.50 ± 12.63 g) than group 1, (231.83 ± 11.60 g) ($p=0.001$) and group 3 animals (231.33 ± 6.80 g) ($p=0.003$). Serum testosterone level was significantly elevated in both treated group 1 and group 2 (2.967 ± 0.67 ng/mL), (3.73 ± 2.10 ng/mL) respectively when compared to the group 3, control (0.68 ± 0.11 ng/mL) ($p=0.001$). Histopathological assessment of the testis of rats in both treated groups illustrated normal architectural spermatogenesis than the control group.

Conclusion: PKG possesses fertility enhancing effects as evident by increasing the total motile sperm count and testosterone level in the male Sprague Dawley rats.

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