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EFFECT OF NICOTINE AND GOAT MILK CO-ADMINISTRATION ON RAT SPERM PARAMETERS

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ABSTRACT

Previous studies reported that the reproductive capacity of male is greatly reduced when injected with nicotine and goat milk is said to have many benefits in human health. Currently, there was no report on the effect of goat milk on the male reproductive performances. Hence, the focus of this study was to show the potential effect of goat milk on the sperm parameters of nicotine treated rats. Twenty seven male Sprague Dawley rats (5 to 6 weeks old) were randomly divided into three groups. For nicotine (N) and goat milk (GM) groups, the rats were daily injected with 5.0mg/kg body weight of nicotine and force-fed with 20.0ml/kg body weight of goat milk, respectively. However, for nicotine with goat milk (N-GM) group, the rats were injected with 5.0mg/kg body weight of nicotine and force-fed with 20.0ml/kg body weight of goat milk. After 60 days of treatments, the rats were sacrificed and their reproductive organs were removed. Sperm were collected from epididymis and assessed for concentration, vitality and morphology. Goat milk and N-GM groups showed significantly higher sperm concentration (40.30±13.39 x 10⁶/ml and 33.41±6.06 x 10⁶/ml, respectively) and live sperm (385.49±12.97 and 301.98±8.43, respectively) as compared to N group. Significantly different with higher value for normal sperm was also observed in GM (188.31±0.61) and N-GM (183.12±0.63) groups than N group. This study suggested that goat milk is potentially useful in increasing the fertility of nicotine treated juvenile male rats and probably provide another alternative in improving infertility among male smokers due to the nicotine intake.

KEYWORDS: Nicotine, Goat milk, Sperm parameters.