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Urology journal

Volume 4, Issue 3, June 2007, Pages 159-163

Effect of cigarette smoke on spermatogenesis in rats.

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Abstract

INTRODUCTION: The aim of this study was to evaluate the process of spermatogenesis in rats exposed to the cigarette smoke. **MATERIALS AND METHODS:** Thirty adult male rats were divided into 2 groups of cases and controls. An apparatus made especially for this study was used to produce smoke from a commonly used cigarette and expose the rats to the smoke. The rats in the case group were exposed to the cigarette smoke for 10 weeks (90 minutes every day for 6 days in each week). The rats in the control group were meanwhile in the fresh room air. **RESULTS:** Development of the sperms was mildly reduced in 14 (93.3%) and 4 (26.7%) rats in the case and control groups, respectively ($P < .001$). The mean average diameter of the seminiferous tubules was reported to be 0.421 ± 0.097 mm and 0.493 ± 0.026 mm in the case and control groups, respectively ($P = .04$). The mean numbers of Sertoli cells were 9.2 ± 1.2 and 13.3 ± 1.8 in the case and control groups, respectively ($P < .001$). A concurrent reduction in the number of germ cells and Leydig cells with the decrease in the number of Sertoli cells was seen in the rats of the case group. **CONCLUSION:** Cigarette smoke has a rather obvious effect on spermatogenesis in rats which may be due to toxic substances in the cigarette or the histologic reactions due to hypoxemia induced by smoke. Although further documentation, especially in humans is required, the potential impact of smoking on fertility in men should be considered in public health education.

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Indexed Keywords

EMTREE medical terms: animal; article; cytology; exposure; male; passive smoking; pathology; rat; seminiferous tubule; smoking; spermatogenesis; Sprague Dawley rat; testis

MeSH: Animals; Inhalation Exposure; Male; Rats; Rats, Sprague-Dawley; Seminiferous Tubules; Smoking; Spermatogenesis; Testis; Tobacco Smoke Pollution

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Chemicals and CAS Registry Numbers: Tobacco Smoke Pollution

ISSN: 17351308 Source Type: Journal Original language: English
 PubMed ID: [17987579](#) Document Type: Article

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