

FULL TEXT LINKS

[Int J Clin Exp Med](#). 2015 Apr 15;8(4):5565-70. eCollection 2015.

Effect of hydrogen injected subcutaneously on testicular tissues of rats exposed to cigarette smoke

Song Chen ¹, Wei Jiang ²

Affiliations

PMID: 26131139 PMCID: [PMC4483942](#)

[Free PMC article](#)

Abstract

Smoking is one of the most common reasons inducing reactive oxygen species in semen. High concentration of active oxygen will cause decrease of sperm density and viability and induce oxidative injury of sperm DNA which has become the hot spot in male infertility. Although hydrogen was found to be an effective remover of active oxygen in liver, heart, kidney and brain, the same effect has not been discussed in reproductive system. The aim of this study was to investigate the protective effect of hydrogen against cigarette smoke-induced damage in rat reproductive system. Adult male Wistar rats were randomly divided into four groups to conduct this experiment, results showed that rats in SK+HSI group (passive smoking and hydrogen subcutaneous injection group) exhibited larger amount of sperm count, smaller sperm deformation rate, higher levels of testosterone and SOD in serum and testis, lower levels of MDA in testis and less morphologic abnormalities compared to SK+NSI group (passive smoking and nitrogen subcutaneous injection group). As a consequence, we concluded that injected subcutaneously exerted protective effects on reproductive system injury of male rats exposed to cigarette smoke through inhibiting oxidative damage.

Keywords: Hydrogen; cigarette smoke; testicles.

Figures

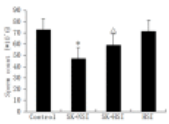


Figure 1 Effects of hydrogen subcutaneous injection...

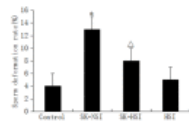


Figure 2 Effects of hydrogen subcutaneous injection...

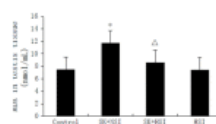


Figure 3 MDA in testis tissue. Our...

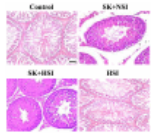


Figure 4
Histopathological examination by H&E

LinkOut - more resources

Full Text Sources

[Europe PubMed Central](#)

[PubMed Central](#)

Research Materials

[NCI CPTC Antibody Characterization Program](#)