

عنوان مقاله:

Saccharin consumption increases sperm DNA fragmentation and apoptosis in mice

محل انتشار:

مجله بین المللی تولید مثل زیست پزشکی (سال:5:12)

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خلاصه مقاله:

Background: Saccharin is an artificial non-caloric sweetener that used to sweeten products such as drinks, candies, medicines, and toothpaste, but our bodies cannot metabolize it. Sodium saccharin is considered as an important factor in tumor promotion in male rats but not in humans. **Objective:** The objective of this study was to investigate the effect of saccharin consumption on sperm parameters and apoptosis in adult mice. **Materials and Methods:** Totally ۱۴ adult male mice were divided into ۲ groups. Group ۱ served as control fed on basal diet and group ۲ or experimental animals received distilled water containing saccharin (۰.۲% w/v) for ۳۵ days. After that, the left cauda epididymis of each mouse was cut and placed in Ham's F۱۰. Swimmingspermatozoa were used to analyze count, motility, morphology (Pap-staining) and viability (eosin-Y staining). Sperm DNA integrity, as an indicator of apoptosis, was assessed by SCD (sperm chromatin dispersion) and terminal deoxynucleotidyltransferase (TUNEL) assay. **Results:** Following saccharin consumption, we had a reduction in sperm motility with respect to control animals ($p=۰.۰۰۰$). In addition, the sperm count diminished (۱۷.۷۰ ± ۱.۱۱ in controls vs. ۱۲.۸۰ ± ۲.۷۹ in case group, $p=۰.۰۰۳$) and the rate of sperm normal morphology decreased from ۷۷.۰۰ ± ۶.۴۰ in control animals into ۶۳.۸۵ ± ۶.۸۱ in saccharin-treated mice ($p=۰.۰۰۱$). Also, we saw a statistically significant increase in rates of sperm DNA damage and apoptosis in experimental group when compared to control one ($p=۰.۰۰۱$, $p=۰.۰۰۲$ respectively). **Conclusion:** Saccharin consumption may have negative effects on sperm parameters, and increases the rate of sperm DNA fragmentation and apoptosis in mice.

کلمات کلیدی:

Sperm, Saccharin, Apoptosis, Mice.

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