Abstract

Objective: To determine the in vitro toxicity of different concentrations of sevoflurane in cells exposed to X-ray. Methods: The genotoxic effects of sevofluorane were studied by means of the micronucleus test in cytokinesis-blocked cells of irradiated human lymphocytes. Subsequently, its cytotoxic effects on PNT2 (normal prostate) cells was determined using the cell viability test (MTT) and compared with those induced by different doses of X-rays. Results: A dose- and time-dependent cytotoxic effect of sevofluorane on PNT2 cells was determined (p >0.001) and a dose-dependent genotoxic effect of sevofluorane was established (p >0.001). However, at volumes lower than 30 L of sevofluorane at 100%, a non-toxic effect on PNT2 cells was shown. Conclusion: sevofluorane demonstrates a genotoxic capacity as determined in vitro by micronucleus test in cytokinesis-blocked cells of irradiated human lymphocytes.

Keywords

Keywords, Anaesthesia, genotoxicity, micronucleus, radiation effects, sevofluorane.