

عنوان مقاله:

Air Pollution, Ozone, and Sulfur Dioxide Can Affect the Blood Serum Lipid Profile and Oxidative Stress of Male Wistar Rats

محل انتشار:

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خلاصه مقاله:

The majority of the body's organs are impacted by ambient air pollution (AAP), which is currently a serious environmental global health issue. The objective of this work was to assess the impact of ozone (O_3), sulfur dioxide (SO_2), and AAP on oxidative stress (OS) and lipid profile indicators in male Wistar rats. To this end, these rats were exposed for three hours each day for five weeks in control, AAP, O_3 (0.6 ppm), and SO_2 (10 ppm) groups (each containing 8 animals). Several parameters, such as total antioxidant capacity (TAC), superoxide dismutase (SOD), glutathione peroxidase (GPx) activities, low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), triglyceride, and malondialdehyde (MDA), were measured on blood samples. AAP exposure on TAC ($P=0.014$) and SOD ($P=0.05$), MDA ($P=0.018$), and HDL ($P=0.003$), O_3 exposure on TAC ($P<0.001$), and SO_2 exposure on blood serum TAC ($P=0.006$) all had statistically significant effects. Based on the results, exposure to SO_2 and AAP did not significantly alter the lipid profile ($P>0.05$). According to our research, exposure to O_3 , SO_2 , and AAP can increase overall antioxidant capacity by stimulating blood serum oxidative defense enzymes. Except for the enhanced effect of O_3 exposure on serum HDL, AAP, SO_2 , and O_3 exposures had no discernible effects on the lipid profile.

کلمات کلیدی:

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