Title: Mechanistic approach on the combine toxicity of selenium and tellurium in rat neuroendocrine centers.

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Selenium and tellurium are widely used in so many industries including steel, rubber, electronic, ceramic, glass, zinc, arsenic, selenium, cadmium, aluminum, copper, tin, thallium, daylight lamps, electronics, photocells, silicon semiconductor devices, manufacture photographic exposure, solar cells, xerography, red or black glass, pigments in plastics, paints, dyes, enamels, inks, textiles, rubber, photographic emulsions, and petroleum (Taylor, 1996, Se-Te, 2013). Se and Te are toxic but its toxicity is not well studied. Earlier Islam group (Kaur et al., 2003 a, b) has reported its neurotoxicity on lipids and oxidative stress parameters in the brain. Islam et al. (2002, 2004) have also reported the neurotoxicity of Se on lipids and oxidative stress. Extending the earlier work of Islam group, we further studied the combine toxicity of Se and Te on neuroendocrine centers in rats brain. There is no report of the toxicity of Se and Te separately or in combination on neuroendocrine centers in rats. This will be the first report of its kind. The male Wistar rats treated with $1/20^{th}$ of LD_{50} of sodium tellurite (4.15 mg, orally), 0.3 mg/kg sodium selenite (i.p) and the half combination of these metals i.e., sodium tellurite (2.075, orally) + sodium selenite (0.15 mg/kg, i.p) for a period of 15 days. On day 16, the animals were sacrificed and brains were taken out to dissect the hypothalamus, pituitary and pineal gland. The each brain part was weight and homogenized in 10 mM Tris-HCl, pH 7.4 to give 5 % homogenate. The homogenate was used for the assay of lipid peroxidation and activity of SOD. The supernatant (15,000 g x 20 min at 4 °C) was used for the other enzymatic LPO and non enzymatic assays (GSH GPx, GR, GST, Catalase, Caspase-3, -9.

Keywords: LPO, GSH, GPx, GR, Catalase, SOD, Caspase-3, -9.

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Biography

Currently Dr. Gulrana Khuwaja is working as Assistant Professor in the Department of Pharmaceutical Chemistry, College of Pharmacy as well as Member of Neuroscience and Toxicology Unit, Jazan University. She got Ph.D. in Chemistry from Aligarh Muslim University, India. Along with routine teaching responsibility, she is involved in active research work. She has one patent and published more than 20 papers in reputed and peer-reviewed international journal with a sum of more than 40 impact factor. Her research has been cited in more than 1,000 citations. She was honoured three times with "best poster presentation awards" in Medical Research Day organized by Medical College Jazan University. Her supervised students also got three times best poster presentation award organized by the Deanship of student Affair at Jazan University. She is a lifetime member of "Indian Academy of Neurosciences". She is also engaged as a principal investigator in an approved project granted by Deanship of Scientific Research, Jazan University.

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