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Molecular profiling of testis in arsenic induced mice

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Arsenic is a potent environmental toxicant and affects biological system through food chain causing toxicity and disturbs different signaling pathways, thus suppresses immune system and finally causing various diseases. In previous study, extensive survey work has been made in arsenic hit area and drinking water and blood samples were collected. Tissue samples have been collected from cancer patients at S S Hospital and Research Institute. After the confirmation of significant high level of arsenic in drinking water, blood and tissue samples, present study was undertaken. Present study was undertaken to observe the effect of arsenic in testicular cells in mice model and its effect on testicular gene expression. Sodium arsenite was administered into Swiss albino mice as 2 mg/kg body wt. for the different durations. Estimation of arsenic was done by atomic absorption spectrophotometer. TUNEL assay was done to observe the DNA damage and microarray analysis was performed to observe the mRNA expression profile in sodium arsenite administered mice model. High accumulation of arsenic was found in testes of Swiss albino mice. Significant DNA damage was observed in arsenic administered testicular cells of Swiss albino mice. Further, mRNA of few genes shows their altered expression. In the present study, it can be concluded that arsenic affects testicular cells leading to DNA damage and alter testicular gene expression. Thus, our results suggest that mice with high accumulation of arsenic shows altered gene expression.

Biography

Akhileshwari Nath has completed her PhD in 1974 from Patna University, India and did Postdoctoral training on Electron Microscopy at Minneapolis, Minnesota, USA in 1976. She is retired Professor and Head of the Department of Zoology from Patna University, India. She was the Head of Mahavir Cancer Institute & Research Centre, India till January 2015. Presently she is the Head of S S Hospital and Research Institute, India. She has published more than 130 papers in reputed journals and completed 5 major research projects funded by Government of India.

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