

3rd International Summit on Toxicology & Applied Pharmacology

October 20-22, 2014 DoubleTree by Hilton Hotel Chicago-North Shore, USA

Influence of melatonin on arsenic mediated pancreatic damage in Swiss albino mice

Dimple Damore

Bhavan's Sheth R.A. College of Science, India

Arsenic compounds are reported as environmental toxicants and human carcinogens. Exposure to arsenic imposes a big health issue worldwide. This study was conducted to evaluate the ameliorating effect of melatonin (MLT) on arsenic induced pancreatic damage in Swiss albino mice. Arsenic trioxide (As_2O_3) was administered orally at the dose of 0.5 and 1.0 mg/kg body weight and MLT was given intraperitoneally (10 mg/kg body weight) for 30 days. At the end of the experimental period, serum amylase, serum lipase, blood glucose, protein and total sulfhydryl groups were measured in addition to histological evaluation. The toxic effect of arsenic was indicated by increased serum amylase, serum lipase and blood glucose in a dose dependant manner. Arsenic intoxication also showed by decreased levels of protein and total sulfhydryl groups. In addition, arsenic exposed mice exhibited destruction of the exocrine and islet cells damage with degenerative changes. Simultaneous administration of MLT exhibited a significant reversal of arsenic-induced toxicity in pancreatic tissue. Furthermore, the histopathological studies confirmed the protective effect of MLT by reducing the pathological changes due to arsenic intoxication in pancreas. These results suggest that MLT has a potential protective effect over arsenic induced pancreatic dysfunction in Swiss albino mice.

Biography

Dimple Damore has completed her PhD in Zoology (Toxicology) at Gujarat University, Ahmedabad, India in 2008. She is an Associate Professor in the Department of Zoology at Bhavan's R.A.College of Science, Ahmedabad, India. Her area of interest is environmental toxicology.

dimpledamore@gmail.com