

## Abstract

People of wide area of India are slowly poisoned through the arsenic contaminated drinking water. The affected people of low economic groups from rural area are suffering with skin cancer, metabolic disorders, reproductive hazards, infertility etc. It is global challenge to prevent arsenic induced reproductive toxicity. There are very limited chelating agents found in the market (BAL, DMSA, DMPS) to prevent arsenic induced health hazards but these have noninvasive and painful treatment strategy. Hence, we have planned to develop an easily available cost-effective drug against arsenic toxicity which has no side effects. To fulfill this endeavor we have chosen arjunolic acid and vitamin B<sub>12</sub> to observe the effects against arsenic induced female repro-toxicity. Sodium arsenite (1.0mg/100gm body weight) was given to the adult female Wistar strain rats with arjunolic acid (1.0mg/100gm body weight) and vitamin B<sub>12</sub> (0.09µg/100gm body weight) alone or in combination to find out preventive, protective and curative effect of these two. Arjunolic acid and vitamin B<sub>12</sub> could prevent arsenic induced ROS-production through the alteration of the antioxidants activities, ovarian steroidogenesis and inflammatory response in preventive, protective and curative manner as focused from *in vivo* experimental model. These mitigating effects may involve an indirect mechanism associated with a critical role of hypothalamico-pituitary-ovarian axis, although arjunolic acid and B<sub>12</sub> had shown its ability to exert its effect directly on the reproductive organs as revealed from the experiment on *in vitro* model.