Histological Change of Potential Carcinogen 4, 4'-Methylenebis (2-Chloroaniline) in Experimental Rat

Introduction and Objective: In order to understand the industrial raw materials, "4, 4 '-methylenebis (2-chloroaniline) (MBOCA)" and whether they are a potential carcinogenic chemical compound, MBOCA-induced sick animal mouse models to examine the histological change of the kidney, ureter and bladder.
Materials and Methods: In total 40 ICR four week male mice with body weight 25-30g were applied for the study: the MBOCA soluble solvent by different dosage (100mg/kg, 200mg/kg), different administration (topical smear, intraperitoneal injection, oral feeding) and the control group for three consecutive months. The ICR mice were sacrificed to pathological anatomy, to observe the renal cell and bladder epithelial cells in histological change.
Results: We have found that 50-60% histopathological changes in topical smear, intraperitoneal injection or oral feeding experimental mice. The microscopic findings showed that there were renal tubular cell hyperplasia, degenerative damage or necrosis and interstitial lymphocytic infiltration appreciated. The urothelium at urinary bladder revealed focal lymphoid aggregation in the lamina propria accompanied by focal but remarkable urothelial dysplasia.
Conclusions: The findings of this study support the conclusions from other studies that MBOCA is a potential carcinogenic chemical compound. Further investigation of the oxidative stress pointer (8OHdG), DNA damage (comet assay) and the precise mechanism of MBOCA in inducing malignancy should be performed. The results may provide new drugs or new development of gene therapy in the future.

Drug names: 4, 4 '-methylenebis (2-chloroaniline) (MBOCA)