Genetic mutations in cell cycle regulatory proteins, microsatellite loci and their association with gallbladder carcinogenesis in the population that exposed to methyl isocyanate

Suresh Kumar Jatawa and Archana Tiwari
Rajiv Gandhi Proudyogiki Vishwavidyalaya, India

Expression profiling of genes that coordinate the mechanisms of DNA repair, cell cycle control, apoptosis and oncogenesis offers a great opportunity for studying multi factor diseases and for understanding the key role of genes in mechanisms which drive a normal cell to a cancer state. Gallbladder cancer (GBC) is an uncommon but highly malignant tumor with varied geographical distribution and poor diagnostic manifestation in early stage. This necessitated a more objective elucidation of GBC at its molecular level. Tissues of (92) patients of gallbladder cancer were examined for gene expression, microsatellite instability and apoptosis through in-house standardized protocols. Resulting data have shown that the women are at high risk for GBC with maximum cases of adenocarcinoma (76%). Highest number of cases has been diagnosed for moderately differentiated adenocarcinoma (68.57%), which evidence lack of proper diagnosis. Mutations of cell cycle regulatory proteins were detected comprehensively in adenocarcinomas (p<0.001). Out of these the expression frequency of cell cycle regulatory genes was higher in moderately differentiated adenocarcinoma in comparison to poorly and well differentiated ones. Microsatellite instability may also be an independent prognostic marker for assessing risk of occurrence in superficial tumors irrespective of the grade. Together these results imply that the isocyanates are potent enough to cause genomic instability under both occupational and accidental exposures along with providing us the impetus for detailed interpretation of the pathophysiological implications of exposure to human beings. We anticipate these data would help us in designing better approaches in risk assessment of future industrial disasters.

Biography
Suresh Kumar Jatawa has completed his MSc in Biotechnology from Dr. Hari Singh Gour Central University Sagar, India and he is currently pursuing his Doctorate from Rajiv Gandhi Proudyogiki Vishwavidyalaya (State Technological University of Madhya Pradesh), India. He has published more than 20 papers in reputed journals and in national & international conferences.

suresh_jatawa@yahoo.com