

P011 DNA damage and histological changes in hepatocarcinogenesis rats treated with Neem extract

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The aim of this study was to study the effect of Neem with respect to DNA damage and histological changes in hepatocarcinogenic rats. Twenty-four rats were divided randomly into four groups. Cancer, cancer treated with Neem, normal control and control treated with Neem. In this study, the aqueous extract of 5% Neem leaves were used orally to treat rats with induced liver cancer by diethylnitrosamine and acetylaminoflourine. Animals were sacrificed and the liver and serum were isolated. The level of alpha-fetoprotein (AFP) was measured in serum as the biomarker for the effect on the liver cancer induced rats. The AFP level was higher ($p < 0.05$) in the cancer group compared to the non-cancer group. After application of a 5% aqueous extract of Neem the level of AFP in hepatocarcinogenesis rats was decreased in comparison to cancer control rats ($p < 0.05$). Microscopic observations of the lesion score have shown no significant ($p > 0.05$) difference between cancer control and cancer with Neem-treated group. Comet assay was used for DNA strand breaks in the cells. Percentage and tail length were assessed using fluorescence microscopy and computer based image analysis. The results show inducing of DNA damage in treated group compared to control group ($p > 0.05$). Therefore Neem may be reducing the rapid replication of cancerous cells by inducing DNA damage and may controlled cells death in hepatocarcinogenic rats.

Keywords: Neem, Comet assay, hepatocarcinogenesis, alpha-fetoprotein (AFP)