

Expanding the Therapeutic Utility of Curcumin

Authors : Azza H. El-Medany, Hanan H. Hagar, Omnia A. Nayel, Jamila H. El-Medany

Abstract : In search for drugs that can target cancer cell micro-environment in as much as being able to halt malignant cellular transformation, the natural dietary phytochemical curcumin was currently assessed in DMH-induced colorectal cancer rat model. The study enrolled 50 animals divided into a control group (n=10) and DMH-induced colorectal cancer control group (n=20) (20mg/kg-body weight for 28 weeks) versus curcumin-treated group (n=20) (160 mg/kg suspension daily oral for further 8 weeks). Treatment by curcumin succeeded to significantly decrease the percent of ACF and tended to normalize back the histological changes retrieved in adenomatous and stromal cells induced by DMH. The drug also significantly elevated GSH and significantly reduced most of the accompanying biochemical elevations (namely MDA, TNF- α , TGF- β and COX2) observed in colonic carcinomatous tissue, induced by DMH, thus succeeding to revert that of MDA, COX2 and TGF- β back to near normal as justified by being non-significantly altered as compared to normal controls. The only exception was PAF that was insignificantly altered by the drug. When taken together, it could be concluded that curcumin possess the potentiality to halt some of the orchestrated cross-talk between cancerous transformation and its micro-environmental niche that contributes to cancer initiation, progression and metastasis in this experimental cancer colon model. Envisioning these merits to a drug with already known safety preferentiality, awaits final results of current ongoing clinical trials, before curcumin can be added to the new therapeutic armamentarium of anticancer therapy.

Keywords : curcumin, dimethyl hydralazine, aberrant crypt foci, malondialdehyde, reduced glutathione, cyclooxygenase-2, tumour necrosis factor-alpha, transforming growth factor-beta, platelet activating factor

Conference Title : ICIBP 2014 : International Conference on Integrative Biology and Pharmacology

Conference Location : Miami, United States

Conference Dates : March 10-11, 2014