Evaluation of Anticancer Effect of Nigella Sativa on Enzymes Involved in DMH Metabolism

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Abstract:
One of the most common causes of cancer deaths in worldwide is colon cancer. Because of the ongoing pharmacological and chemical treatments in Iran But research into the effects of medicinal plants on cancer control and treatment is scarce or lacking. The purpose of this article is to investigate the anticancer effect of Nigella Sativa on the enzymes involved in DMH metabolism.**Materials and Methods:** In this study, 50 rats in 6 positive control groups, 2% Nigella Sativa treatment, 4% Nigella Sativa treatment, negative control, 2% Nigella Sativa sham and 4% Nigella Sativa sham were injected with Dimethylhydrosine for 18 weeks. Twelve weeks after the last injection, rats were treated and maintained, then autopsy and intestinal biopsy were performed. Blood samples were taken from each rat and liver and clone samples were collected and then homogenized and evaluated for biochemical parameters (GSH, GST and cytochrome P-450).
Results: The results showed that treatment of rats with diet containing Nigella Sativa resulted in modulation of enzymes activity in DMH metabolism. The decrease in GSH level by the essential oil may indicate active detoxification of the active metabolite of DMH by the GST enzyme through its conjugation with GSH.
Conclusion: Based on the results, it can be said that Nigella Sativa is probably similar to the blocking agents of cancer. That is, by modulating the activities of Phase II and I enzymes, metabolism of toxins results in a decrease in DMH (methyl diazonium) metabolism and consequently inhibition of tumor formation in colon tissue.**Keywords:** Dimethylhydrazine (DMH) metabolism, GSH enzyme, GST and cytochrome P-450, Clone cells, Nigella Sativa