

## Effects of honey with *Nigella sativa* mixture on Radiation-induced Diarrhea

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### Abstract:

**Background and Purpose:** Diarrhea is a well-recognized side effect associated with pelvic radiotherapy. The change in the intestinal bacterial flora and increased permeability of mucous cells may cause radiation-induced diarrhea. In this research the effects of honey with *Nigella sativa* mixture against radiation –induced diarrhea are evaluated. Honey is a putative nutritional with a variety of health effects, including antibacterial, antioxidant, anti-inflammatory and prebiotic. Seed of *Nigella sativa* commonly known as black seed which is used in folk medicine in the Middle East such as Iran for the promotion of good health and the treatment of a variety of ailments including Asthma, headaches, some infections, hypertension and gastrointestinal disorders such as diarrhea.

**Materials and Methods:** Forty-one adult patients with pelvic cancer were treated with pelvic radiotherapy for 5 weeks and randomized to receive honey with *Nigella sativa* mixture (30gr honey and 3gr *Nigella sativa* powdered in every day) (n = 17) or placebo capsules (n = 24). Diarrhea grade was recorded weekly according to the Common Toxicity Criteria system and scored the stool consistency grade using the Bristol scales.

**Results:** Consumption of honey with *Nigella sativa* mixture was found to have a significant effect in decreasing in daily number of bowel movements ( $P = 0.004$ ) and diarrhea grade (in fourth and fifth week;  $p = 0.001$  and  $p = 0.002$  respectively) and also increasing in the stool consistency (in fourth and fifth week;  $p = 0.005$  and  $p = 0.015$  respectively) in the patient when compared to the controls. The antidiarrheal drug necessity was observed in patients in the honey with *Nigella sativa* mixture group significantly less than the placebo group ( $p = 0.028$ ) during the treatment.

**Conclusion:** It seems that honey with *Nigella sativa* mixture can reduce the incidence of radiation-induced diarrhea and the need for anti-diarrheal medication.

**Keywords:** Honey, *Nigella Sativa*, Diarrhea, Radiotherapy, Pelvic cancer.

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