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Editorial

Nigella Sativa: A Potential Glucose Lowering Herb

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American Diabetes Association (ADA) classifies herbal medicines as level C evidence in the management of diabetes [1]. This does not necessarily mean that herbs are not effective in diabetes, rather indicates the need for a bunch of strong research and meta-analyses. Herein, we are looking into the clinical effectiveness of nigella sativa (*N. sativa*) seed or oil, compared to glucose-lowering medications in type 2 diabetes (T2D).

N. sativa, known as black cumin is a popular edible plant, native to South and Southwest Asia and commonly cultivated in Middle East and North Africa [2]. Active ingredients in *N. sativa* seed (thymoquinone, dithymoquinone, oleic acid, linoleic acid, etc) are accountable for its therapeutic capacity [3,4].

There are a number of clinical trials investigating therapeutic effects of *N. sativa* (seed or oil) on glucose concentrations in diabetes [5-7]. Heshmati., *et al.* [5], in their 12-week trial studied the hypoglycemic effects of *N. sativa* oil (3 g/day) among adults with T2D. *N. sativa* oil was able to significantly reduce fasting blood sugar (FBS) and glycosylated hemoglobin (HbA1c) by 17.2 mg/dl and 0.5%, respectively, in the intervention condition compared to placebo. Only mild gastrointestinal side effects were reported in this study. Other existing randomized trials with *N. sativa* (e.g. Kaatabi., *et al*. 2015) show similar effects on glucose [6].

There are systematic reviews and meta-analyses investigating the potential of common antidiabetic medications [8-10]. These reviews reported the effect size of glucose lowering medications including dipeptidyl peptidase-4 (DPP-4) inhibitors [HbA1c range: -0.6% to -1.1%; FBS range: -12.6 mg/dl to -27 mg/dl], glucagon-like peptide-1 (GLP-1) receptor agonists [HbA1c range: -1.1% to -1.6%; FBS range: -19.8 mg/dl to -37.8 mg/dl] and sodium-glucose cotransporter-2 (SGLT-2) inhibitors [HbA1c range: -0.6% to -0.9%; FBS: -19.8 mg/dl to -34.2 mg/dl]. Moreover, HbA1c-reducing effects of sulphonylureas (-0.85%), α-glucosidase inhibitors (-0.61%) and thiazolidinediones (-0.42%) as add-on therapy to metformin is reported in another meta-analysis [11], which is comparable to the current comment on *N. sativa*. However, the much longer duration of trials assessing medications should be taken into account when interpreting results.

Safety is also a major consideration in selecting treatment options. Little or no side effects on humans have been reported with oral intake of *N. sativa* seed or oil [12,13]. However, side effects are often inevitable when it comes to medications. Adverse outcomes such as gastrointestinal problems, urinary tract infection, pancreatitis and heart failure have been reported with antidiabetic drugs [14].

Herein, available evidence in support of the potential therapeutics of *N. sativa* on glucose homeostasis in diabetes along with barely reported side effects were discussed. This editorial introduces potential glucose lowering properties of *N. sativa* opening a window for future interventions investigating larger doses of *N. sativa* in longer durations and in combination with medications.

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