

Case Report of Refractory Psoriatic Arthritis Achieving Remission Using *Nigella sativa* (Black Seed Oil) Extract

To the Editor:

Psoriatic arthritis (PsA) is one of the major extra skin manifestations of psoriasis and will develop in 20–30% of patients with psoriasis¹. Alternative medicines, mainly herbal products, have been commonly used by patients for the treatment of psoriasis and there have been some studies into their efficacy, but most cases of PsA still require systemic therapy².

Extract from *Nigella sativa*, also known as black seed oil, has been found to have antiproliferative, antiosteoporotic, antiinflammatory, and antidiabetic effects in many studies³. The major active ingredient, thymoquinone, has been demonstrated to have comparable results with topical hydrocortisone 2.5% when applied topically on carrageenan-induced paw edema and granuloma pouch on rats, manifested by a notable decrease in leukocyte count and tumor necrosis factor- α concentration in inflamed areas⁴.

The use of *N. sativa* systemically for the treatment of PsA has not been investigated or reported in the literature. We describe the case of a patient with PsA refractory to both conventional and biologic therapy who achieved minimal disease activity state when he took oral black seed oil treatment on his own.

The patient is a 56-year-old man who was diagnosed with PsA at the age of 31 with polyarthritis, axial disease, and severe skin plaque psoriasis. He had no uveitis and no gastrointestinal disease. His main persistent joint complaints were bilateral knee synovitis, for which he received multiple intraarticular steroid injections and bilateral synovectomies to no avail. He was initially treated with indomethacin 150 mg per day, along with methotrexate 25 mg weekly with no improvement, followed by celecoxib 400 mg per day, after which he was prescribed etanercept (ETN) 50 mg weekly in 2003. He continued ETN until 2011, when he chose to stop. Unfortunately, during all these years, the patient sustained chronic deformities in his hands bilaterally in the distal interphalangeal joints. ETN was resumed later in 2016 with partial response until April 2019, when the patient decided to switch to alternative medicine. He started by applying *N. sativa* (black seed) cold-pressed 100% oil marketed over the counter topically to the inguinal area where he had severe skin plaques. He noticed marked improvement — the skin cleared within a week of treatment. In light of these results, he decided to take orally around 2 teaspoons (10 g) of this extract containing 400 mg of thymoquinone. After only 3 days of oral treatment, he reported marked improvement in his arthralgias and complete resolution of his knee pain. This was documented when he presented for followup at our clinic 3 months later. On examination, the patient had no active arthritis except for a mildly swollen right knee. He also had improved range of motion of bilateral hands and knees. Skin examination did not reveal any active psoriatic lesion [Psoriasis Area and Severity Index (PASI) = 0]. The patient's Disease Activity Index for Psoriatic Arthritis score while taking ETN was 25, indicating moderate disease activity. This score went down to 4, indicating remission, only 3 months after starting the oral *N. sativa* extract. He also fit the classification criteria of minimal disease activity described by Coates, *et al*⁵.

This case serves as an eye-opener for the use of alternative medicine and exploration of potential novel therapeutic effects of the active ingredient of such plants. Black seed oil extract's inhibitory effect on skin keratinocytes inflammation in albino rats with imiquimod-induced psoriasis-like lesions was demonstrated by Okasha, *et al*⁶. This was also described previously by Dwarampudi, *et al* using ethanolic extract of black seeds on a mouse tails model⁷. Another case series using a natural preparation including black seed extract showed treatment success defined by PASI reduction of at least 75% in 10 out of the 12 patients included⁸.

Further investigations and structured randomized control trials are needed for better understanding of the effect of *N. sativa* oil, and its active ingredient in the treatment of inflammatory disorders such as PsA.

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