

## Letter to the Editor

## Increased Density of Demodex Folliculorum May be Related to Additional Risk Factors

### Dear Editor,

We read with interest the article entitled ‘The Presence of Demodex Folliculorum in Various Obese Groups According to BMI Levels’ by Dokuyucu and colleagues published in the Archive of Iranian Medicine. The authors investigated the frequency of Demodex folliculorum (DF) infestation in study groups according to their BMIs. They hypothesized that a higher BMI is associated with increased levels of adipokines and pro-inflammatory cytokines, such as leptin and IL-6. Since they stimulate the ACTH release and the corticosteroids production, these mediators are supposed to have deleterious impacts on the immunity, resulting in immunosuppression related to an increase in the density of DF.<sup>1</sup>

The Demodex species are microscopic, obligate, elongated mites belonging to the family Demodicidae of the order Acari of the class Arachnida.<sup>2,3</sup> In many cases, mite infestation is asymptomatic and their role remains unclear. Demodex folliculorum (D.f) and Demodex brevis (D.b) are found parasitizing on the human body surface. D.f. and D.b. are parasites in hair follicles and pilosebaceous glands. The mite population varies with age. Some researchers reported that the infestation rate of Demodex could be higher than 90% in college students.<sup>2</sup> Therefore, the infestation of Demodex has been recognized by many researchers as one of the important causes of skin diseases and has increasingly become a public health concern. Demodex has been associated with the development of pityriasis folliculorum, rosacea, perioral dermatitis, seborrheic dermatitis, pustular eruption, blepharitis, seborrheic alopecia, and the dermatosis, which persists and shows a resistance to classical therapies.<sup>2,3</sup> The reported rate of parasite carriers among healthy subjects varies and may increase up to 100% symptoms are mainly developed in people with predisposing factors.<sup>2</sup> Association of increased frequency of demodicosis with immune system dysfunctions support this idea. When the mite multiplies and reaches to a sufficient number, it can become pathogenic due to its enhanced irritating action. The host immune defence appears to be the most important factor to prevent mite overgrowth.<sup>4</sup> A positive correlation between high density of Demodex mites and the presence of antigens affecting tissue compatibility, HLA Cw2 and Cw4, has been established.<sup>5</sup>

We wonder if the authors evaluated the potential role of alcohol consumption on the DF frequency in the present study. Alcohol consumption rates are higher among obese subjects,<sup>6,7</sup> and alcohol intake has been linked to increased frequency of the DF infestation.<sup>8</sup> Fatty acid ethyl esters (FAEE) in skin surface lipids are known to be direct alcohol biomarkers. The amount of FAEEs seems to emerge as a valuable predictor of alcohol consumption, an issue not assessed in this paper.<sup>9,10</sup> Additionally, the subjects using alcohol have more oily skins than those who do not use. Therefore, it may simply be the increased sebum production in obese individuals that favors DF proliferation. As known, DF is a demodectic mite that may be predominantly detected on seborrheic areas of the body in all age and racial groups.<sup>1,8</sup>

In conclusion, additional risk factors should also be identified when determining the DF frequency, as they may contribute to the risk.

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### Author's Reply

We are pleased that our work “The Presence of Demodex Folliculorum in Various Obese Groups According to BMI Levels” published in Archives of Iranian Medicine (2016; 19: 210 – 214), has aroused interest. With regard to the considerations expressed in your Letter to the Editor, in our study, we detected the presence of the parasite Demodex folliculorum (DF) in various obese groups according to BMI Levels. The patients with systemic diseases (malignancy, diabetes mellitus, hypertension, autoimmune diseases, cardiac, metabolic, and central nerve ischemia), who use systemic and/or local corticosteroids, or who had any dermatologic problems (such as like erythematous papule, pustule and skin type etc.) were excluded. The data on age, gender, height and weight were recorded from the patient files.<sup>1</sup> Although it has not specified

in the material methods, the patients with alcohol consumption was excluded in the current study.

Alcohol consumption can weaken the immune system and cause more severe infections. Demodex spp is assumed to be more common in alcohol dependent patients, due to partial suppression of immune system and lack of good self-care. Demodex spp. are more common in alcohol dependent patients, due to conditions of reduced self-care and immunosuppression.<sup>2</sup> As stated by Unal, et al. additional risk factors should also be identified when determining the DF frequency, as they may contribute to the risk.

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