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Nutrition and Psoriasis

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Abstract

Psoriasis is a chronic inflammatory skin disease characterized by accelerated tumor necrosis factor-/interleukin-23/interleukin-17 axis, hyperproliferation and abnormal differentiation of epidermal keratinocytes. Psoriasis patients are frequently associated with obesity, diabetes, dyslipidemia, cardiovascular diseases, or inflammatory bowel diseases. Psoriasis patients often show unbalanced dietary habits such as higher intake of fat and lower intake of fish or dietary fibers, compared to controls. Such dietary habits might be related to the incidence and severity of psoriasis. Nutrition influences the development and progress of psoriasis and its comorbidities. Saturated fatty acids, simple sugars, red meat, or alcohol exacerbate psoriasis via the activation of nucleotide-binding domain, leucine-rich repeats containing family, pyrin domain-containing-3 inflammasome, tumor necrosis factor-/interleukin-23/interleukin-17 pathway, reactive oxygen species, prostanoids/leukotrienes, gut dysbiosis or suppression of regulatory T cells, while n-3 polyunsaturated fatty acids, vitamin D, vitamin B12, short chain fatty acids, selenium, genistein, dietary fibers or probiotics ameliorate psoriasis via the suppression of inflammatory pathways above or induction of regulatory T cells. Psoriasis patients are associated with dysbiosis of gut microbiota and the deficiency of vitamin D or selenium. We herein present the update information regarding the stimulatory or regulatory effects of nutrients or food on psoriasis and the possible alleviation of psoriasis by nutritional strategies.

Keywords: psoriasis, nutrition, dietary factors, gut dysbiosis, NLRP3 inflammasome, omega-3 fatty acids, vitam

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