

ROLE OF PROBIOTICS SUPPLEMENTATION IN IMPROVING THE SYMPTOMS AND INFLAMMATION IN PATIENTS WITH PSORIASIS: A CASE SERIESDr. Upasana Chauhan¹, Dr. Aakanksha² and Dr. Nita Kumari^{3*}¹Medical Officer, Dermatology, Civil Hospital, Nagrota bagwan, Kangra.²Medical Officer, Dermatology, Civil Hospital, Bhoranj, Hamirpur.³Dermatology, Civil Hospital, Ghumarwin, Bilaspur.

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ABSTRACT

Psoriasis is a disease of chronic inflammation and associated with cardiovascular risk factors. In several research findings, there has been a link between unbalanced gut microbiome and psoriasis. So, by modifying the gut microbiota with probiotics in psoriasis patients, there may be a decrease in cardiovascular risk factors and chronic inflammation.

INTRODUCTION

Psoriasis is a chronic inflammatory skin disease with a significant hereditary predisposition and autoimmune pathological characteristics.^[1] Psoriasis is more prevalent in high-income countries and occurs more frequently in adults, compared to children.^[2] Psoriatic arthritis is the most well-known complication of this disease, although it is also associated with an increased risk of cardiovascular disease, diabetes mellitus, obesity, and hyperlipidemia.^[3] Patients with psoriasis at present need long-term medication to control their condition. There are many clinical treatment methods, including narrow-band ultraviolet radiation phototherapy, oral acitretin, methotrexate, and cyclosporine. Methotrexate and etanercept are often used in China, and recombinant human interleukin, infliximab, adalimumab, ustekinumab, secukinumab, etc. are also used. However, there are side effects such as gastrointestinal reactions and liver and kidney toxicity of these drugs which has led to poor patient compliance. In addition, due to the high cost of some biological agents, patients' access to medicines is restricted.

METHODS

Three patients of psoriasis were arbitrarily assigned to receive probiotic capsules for a period of two months. There were no statistically significant differences in sex distribution, smoking status, family history of psoriasis. Their blood pressure, Psoriasis area and severity score (PASI), pro-inflammatory cytokines (CRP and Interleukin-1beta) and quality of life were assessed. PASI and DLQI scores are markers that reliably correlate with psoriasis severity and quality of life, respectively, for patients with psoriasis. In line with our results, recent

clinical trials have highlighted that probiotic and/or prebiotic supplementation in patients with psoriasis resulted in significantly lower PASI and DLQI scores, indicating improvement in disease severity and quality of life.

CASE 1

A 45-year-old male patient presented to the dermatology and was a known case of psoriasis vulgaris for the past 20 years. The sites involved were both limbs, back, scalp and nails. Patient took multiple treatments in the past including both topical and systemic therapies. We gave probiotic treatment in addition to the above treatment and followed up the patient for two months. There was a significant improvement in disease severity (PASI 52 drops to 31) and the quality of life of the patient.



CASE 2

A 50-year-old female patient presented to the dermatology OPD with palmo-plantar psoriasis and the duration of the disease was 15 years. Patient had multiple co-morbidities such as diabetes mellitus, hypertension and heart disease. She was stressed about the long course of disease and was on anti-anxiety drugs. After starting probiotic treatment along with anti-psoriatic treatment, the erythema, induration and scaling decreased along with improvement in her blood pressure and inflammatory cytokines.

CASE 3

A 40 years old male patient having psoriasis vulgaris for past 10 -15 years showed a significant improvement in disease after initiation of probiotic treatment.

As psoriasis has a significant negative impact on health-related quality of life^[4] our findings suggest that probiotic/prebiotic supplementation could be beneficial in the management of the disease, along with conventional anti-psoriatic treatment. Our results showed a significant difference in total cholesterol (C), low-density lipoprotein (LDL)-C, and high-density lipoprotein (HDL)-C. Alterations in the *Firmicutes/Bacteroidetes* ratio have been associated with gut dysbiosis, obesity, and intestinal inflammatory diseases, while increasing the *Firmicutes/Bacteroidetes* ratio using probiotic supplements has been associated with a protective and anti-inflammatory intestinal effect.

DISCUSSION

Psoriasis is a chronic inflammatory skin disease. It is characterized by erythema, scaling and induration. The causes of psoriasis are very complex, different patients' conditions are quite different. At present, many modern studies believe that a variety of factors, such as patients' genetic factors, infections, metabolic disorders, endocrine disorders, neuropsychiatric factors, and patients' immune disorders, contribute as the cause of psoriasis. Probiotics are a class of active microorganisms that produce beneficial effects on the host by regulating the intestinal microecological balance and play an important role in immune regulation, metabolic processes, and neuroendocrine. For a long time, active

organisms (probiotics) have been introduced to selectively enhance the intestinal microbiota, or indigestible carbohydrates (prebiotics) have been given to actively promote growth, thereby controlling the intestinal microbiota. The role of prebiotics in atopic dermatitis, acne, and wound healing has been seen and it has achieved good results. Probiotics have an immunomodulatory effect on the skin and enhance the skin barrier repair function by reducing the bacterial load of the skin and antagonizing invasive symbiosis. Patients with psoriasis need long-term medication to control their condition. Recent studies suggest that changing the intestinal flora may be a potential treatment. In our study, probiotic supplements significantly improved patients' quality of life. PASI, CRP levels, IL-1 levels were significantly decreased in patients. It demonstrates how the severity and QoL of psoriatic patients were enhanced by probiotic. It also decreases the markers of inflammation and cardiovascular risk factors.

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