

## Quality of Life in Psoriasis Vietnamese Patients Treated with Metformin in Combination with Methotrexate

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### Abstract

A cross-sectional study was performed on 48 psoriasis Vietnamese patients treated with metformin as an add-on for methotrexate and 48 psoriasis patients treated methotrexate alone. The mean PASI scores were  $5.25 \pm 5.72$ . Total QOL scores had a slight difference between patients treated metformin combined with methotrexate and methotrexate alone ( $62.32 \pm 18.1$  vs  $60.91 \pm 19.63$ ). Combined therapy with metformin and methotrexate contributes to significantly improve the quality of life for patients with psoriasis.

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**Keywords:** Psoriasis; Metformin; Methotrexate

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### Dear Editor,

Psoriasis is a chronic skin disease affecting social relations, psychological status, and daily activities. Quality of life (QOL) is increasingly recognised as an important outcome measure in psoriasis patients [1], [2]. Dermatologic treatment of psoriasis has become increasingly effective, sometimes even using complementary and alternative medicine (CAM), contributing to improve the QOL of patients [3] significantly. According to some studies showed that metformin is a logical add-on therapy for patients with psoriasis and metabolic syndrome treated with methotrexate. Evaluation of the quality of life of patients with psoriasis treated with metformin

and methotrexate is important. A Metformin therapy combined with methotrexate has any impact on the QOL of patients with psoriasis?

A cross-sectional study was performed on 48 psoriasis patients treated with metformin as an add-on for methotrexate, and 48 psoriasis patients treated methotrexate alone. The severity of disease was calculated by the Psoriasis Area and Severity Index (PASI). These patients were interviewed with the short-form-36 (SF36) questionnaire to assess their quality of life.

The mean PASI scores were  $5.25 \pm 5.72$ . Total QOL scores had a slight difference between patients treated metformin combined with methotrexate and methotrexate alone ( $62.32 \pm 18.1$  vs

60.91 ± 19.63). Especially in two domains: Role-physical (59.4 ± 21.3 vs. 58.8 ± 25.2) and social functioning (62.5 ± 24.6 vs. 60.15 ± 25.5) (P < 0.01).

Metformin act through activation of adenosine monophosphate-activated protein kinase (AMPK) in extracellular signal-related kinase (ERK1/2) signalling pathway leading to cell cycle arrest and therefore inhibition of cell proliferation, the hallmark of psoriasis. AMPK activation not only inhibits iNOS, dendritic, T cell and monocyte/macrophage activation but also activates IL-10 and TGF-β, thereby exerting its anti-inflammatory action. The anti-proliferative and anti-inflammatory action of metformin might have resulted in improving the QOL of psoriasis patients [4], [5], [6], [7], [8].

In conclusion, there is a difference in the quality of life in psoriasis patients treated metformin as an add-on for methotrexate compared with patients treated methotrexate alone. Combined therapy with metformin and methotrexate contributes to significantly improve the quality of life for patients with psoriasis.

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