



J Cutan Med Surg. 2015 Mar-Apr;19(2):144-8. doi: 10.2310/7750.2014.14076. Epub 2015 Mar 11.

Low glutathione peroxidase activity levels in patients with vitiligo

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PMID: 25775636 DOI: [10.2310/7750.2014.14076](https://doi.org/10.2310/7750.2014.14076)

Abstract

Background: Vitiligo is an idiopathic skin disease characterized by white areas on the skin due to loss of the functional melanocytes, with possible involvement of oxidative stress. Glutathione peroxidase (GPx) is an antioxidant enzyme that protects cells against oxidative damage.

Aim: To examine serum GPx levels in patients with vitiligo and to relate the findings to the clinical features.

Patients and methods: The study group included 60 patients with vitiligo and 30 matching healthy controls. GPx activity was evaluated using enzyme-linked immunosorbent assay.

Results: We found a significant decrease in serum GPx activity level in the patients with vitiligo compared to the healthy controls (0.29 ± 0.14 versus 0.47 ± 0.13 , $p < .001$). The levels were significantly low in skin phenotypes III and IV ($p < .001$). Higher levels were also observed with increasing age (≥ 14 years), prolonged disease duration (≥ 3 years), and generalized and extensive vitiligo ($< 50\%$). However, these variations were statistically insignificant.

Conclusions: Low levels of serum GPx activity, indicative of a disturbed oxidant-antioxidant system, may contribute to the development of vitiligo.

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