NEUROGENETIC AND PSYCHOLOGICAL PREDICTORS OF PROGRESSIVE VITILIGO

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DOI: 10.67620/dermajournal.1730063

Keywords: *vitiligo, disease progression, CRH-R1, BDNF, genetic polymorphism, anxiety, neuroendocrine factors.*

Background. Vitiligo is a chronic pigmentary disorder with a highly variable clinical course. In some patients, depigmentation remains stable for years, whereas others experience continuous development of new lesions and enlargement of existing patches. Identification of patients at increased risk of disease progression may facilitate earlier intervention and individualized follow-up. Growing evidence suggests that neuroendocrine mechanisms, psychological distress, and genetic susceptibility may contribute to vitiligo activity.

Objective. To evaluate neurogenetic and psychological factors associated with progressive vitiligo and to identify characteristics that may help distinguish patients at increased risk of disease progression.

Materials and Methods. The study included 93 patients with vitiligo. The extent of depigmentation was assessed using the Vitiligo Extent Score (VES). Psychological symptoms were evaluated with the PHQ-SADS questionnaire. Serum concentrations of brain-derived neurotrophic factor (BDNF) and corticotropin-releasing hormone (CRH) were measured by enzyme-linked immunosorbent assay. Genetic analysis included the BDNF rs11030094 polymorphism and the CRH receptor 1 (CRH-R1) rs242924 polymorphism using real-time polymerase chain reaction.

Results. A significant relationship was observed between the CRH-R1 rs242924 polymorphism and progressive vitiligo. Carriage of the T allele and TT genotype was associated with an approximately three- to fourfold higher likelihood of disease progression, whereas the G allele and GT genotype were more frequently associated with a stable clinical course. Psychological status was also relevant: patients with mild or moderate anxiety symptoms had approximately 1.6-fold higher odds of vitiligo progression. These findings indicate a potential interaction between stress-related neuroendocrine pathways and genetic susceptibility in determining disease activity.

Conclusion. Progressive vitiligo appears to be associated with both psychological and neurogenetic factors. The CRH-R1 rs242924 T allele and TT genotype, together with clinically relevant anxiety symptoms, may help identify patients who require closer observation. Incorporating assessment of psychological status and selected neurogenetic markers into a personalized risk-based approach may improve early recognition of patients prone to progressive disease.