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PIGMENTATION

## NON IMMUNE FACTORS IN VITILIGO

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The appearance of vitiligo lesions is associated with the death or functional defect of epidermal melanocytes. This catastrophic occurrence appears as a consequence of a mix of pathogenic events. However most of the studies have been focused on the possible final event i.e. the autoimmune cell destruction. With a multifactor approach we tried to re examine the cross-talking pathways for energetic aspects, redox check-points and immune surveillance. The deregulation of thermodynamic and redox equilibrium is associated with both inhibition of melanogenic pathway and induction of cellular oxidative damage. The defective mitochondrial activity is associated with an alteration of the membrane lipid constitution, a decreased ATP, an increased lactate production, and a high level of ROS generation. The continuous intracellular oxidative stress can lead to a senescence prone phenotype capable to render the cells highly susceptible to occasional stressful stimuli. The primitive or secondary loss of the correct redox balance facilitates the access of the immunocompetent cells to usually masked antigens or promotes the assembly and production of mediators of the innate immunity. The multifocus angle of observation provides a new approach to understand vitiligo pathogenesis. The advance in the studies on the pathogenesis and the integrated view can contribute to clarify the mechanism of action of established therapies and indicate novel perspectives for the treatment of the disease.



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