

THE IMPACT OF EMOTIONS AND STRESS ON ALLERGIC DISEASES

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Introduction. Allergic diseases such as Atopic dermatitis, Asthma and even Allergic rhinitis involve chronic immune reactions to environmental triggers. While such cases are seen as immune mediated, evidence now supports a critical link between emotional stress and allergic disease activity. The Hypothalamic pituitary adrenal (HPA) axis and sympathetic nervous system is activated by stress which causes cortisol release and shifts in cytokine profiles. These responses can elaborate Allergic inflammation by promoting IgE production and mast cell activation. Emotional Dysregulation can manipulate this response by imparting neuroimmune balance. Psychoneuroimmunology (PNI) administers a framework to understand how emotions and stress affect immune function. This Thesis aims to educate how emotional stress influences allergic symptoms and inflammatory markers contributing to degree of disease severity.

Research Objective. Exploring whether higher levels of Stress and emotional Dysregulation are linked to increased allergic symptoms and inflammatory markers (cortisol, IgE, cytokines) in people with allergic diseases, compared with normal condition.

Materials and Methods. A cross section study included 30 participants with diagnosed allergic diseases and 30 matched controls. The inclusion criteria was adult between the ages 18 to 50 with Asthma, allergic rhinitis or Atopic dermatitis (people with psychiatric diagnoses were excluded). Measures like Perceived Stress Scale (PSS), Difficulties in Emotion Regulation Scale (DERS) and Blood tests for cortisol, total IgE, IL-6 and TNF-alpha. T-tests and Pearson correlations were used to compare groups and assess relationship between Psychological scores and immune markers for analysis (Significance set at $p < 0.05$)

Research Results. Allergic participants reported higher stress (mean PSS = 24.8) than controls (17.1, $p < 0.01$) and scored higher on emotional Dysregulation (DERS = 92.5 vs 71.3, $p < 0.01$). Blood tests showed elevated IgE (180 vs 65 IU/mL), Cortisol (20.2 vs 13.7 microgram/deciliter) and high levels of IL-6 and TNF-alpha in allergic group. Stress scores were positively correlated with immune markers (e.g PSS and IgE : $r = 0.61$; PSS and IL-6 : $r = 0.57$), suggesting that higher stress was instigating a greater allergic inflammation.

Conclusion. This study suggests that stress and emotional factors may influence allergic disease activity through neuroimmune pathways. Adults with higher stress showed increased inflammatory markers and worsened symptoms. These findings support The idea that managing stress and emotional well being could play a role in treating allergies. Mindfulness, therapy and stress reduction strategies may complement Medical treatments. Further Research with larger samples and longer follow up time could deepen our understanding of the mind body connection.