



Stress, depression and the activation of the immune system.

Leonard B.

Department of Pharmacology, National University of Ireland, Galway, Ireland.

Both stress and depression have been associated with impaired immune function and increased susceptibility of the patient to infectious diseases and cancer. While it was initially thought that the hypercorticosolaemia caused a suppression of immune function, it is now apparent that adaptive changes result from chronic stress and depression that lead to a hypoactivity of the glucocorticoid receptors on immune cells and in limbic regions of the brain. Thus depression is now thought to be associated with activation of some aspects of cellular immunity resulting in the hypersecretion of proinflammatory cytokines and the hyperactivity of the hypothalamic-pituitary-adrenal axis. There is also experimental evidence to show that such immune activation induces "stress-like" behavioural and neurochemical changes in rodents which supports the hypothesis that the hypersecretion of proinflammatory cytokines are involved in the pathology of depression. This review attempts to show how the immune, endocrine and neurotransmitter systems are integrated and how the result of such integration may be causally involved in the aetiology of depression.

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