

A Dynamic and Phase-specific Immune Model of Depression

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Introduction

Immune dysfunction and pro-inflammatory states in particular have been implicated in the aetiology and pathogenesis of depression. While the onset of an episode and certain symptoms of depression appear well explained by this inflammatory model, the underpinnings of the episodic and progressive nature, as well as relapse and remission states in depression are not well understood.

Objectives

To present a dynamic phase-specific model of immune dysfunction of both the innate and adaptive immune system in clinical depression.

Aims

In this presentation, results are presented on additional immune factors beyond pro- and anti-inflammatory cytokines that may effectively contribute to the neurobiology and the complex course of clinical depression suggesting a phase-specific involvement of the immune system in depression.

Results

Considering neurobiological effects of immunomodulatory factors such as T cells, macrophages, microglia and astrocytes relevant to depression, the presentation will demonstrate a neuroimmune model of clinical depression underpinned by both innate and adaptive immune dysfunctions and by dynamic immunomodulatory processes during phases of depression. Such a dynamic neuroimmune model of clinical phases of depression shows that innate and adaptive immune factors are dysregulated in a dynamic way (acute vs remitted vs recurrent / progressive).

Conclusions

The presented phase-specific and dynamic model of clinical depression has implications for immunomodulatory and anti-inflammatory treatments of depression depending on the clinical and immunological phases. Caution is required for anti-inflammatory treatments since not all phases of depression are equally suited and some may be contraindicated for anti-inflammatory treatments.