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Poster Presentation

The Effect of Reducing CCL₁₁ on Multiple Sclerosis Treatment by Using Heterochronic Parabiosis Techniques

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Abstract

Introduction: Multiple sclerosis is a chronic neuroinflammatory disease that leads to distribute neurodegeneration in the grey and white matter of the brain. In MS, age-related iron accumulation, chronic oxidative injury and activation of microglia are key factors to create neurodegeneration. Also concentration of CCL₁₁ is increased in multiple sclerosis. CCL₁₁ can amplify glutamate mediated neurotoxicity and inhibit neurogenesis. **Materials and Methods:** A model of Heterochronic Parabiosis is created with joining a sick animal to healthy young animal. **Results:** It is expected by reducing CCL₁₁, healthy young blood could be effective in slowing and improving disease. **Conclusion:** Other studies suggest that multiple sclerosis treatment should be based on a combination of anti-inflammatory, regenerative, and neuroprotective strategies. By using heterochronic parabiosis has been shown that, young blood can rejuvenate and improve the regenerative capacity of peripheral tissues and central nervous system in aged animals. GDF₁₁ is a systemic 'pro-youthful' factor in young parabiont, that promote neurogenesis and rejuvenate regeneration capacity of CNS and promote tissue regeneration. So it seems high concentration of GDF₁₁ and low concentration of ccl₁₁ in healthy young parabiont may be effective on regenerative capacity of central nervous system in MS animals.

Keyword: Multiple sclerosis, Neurodegeneration, Heterochronic parabiosis, CCL₁₁, GDF₁₁

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