

عنوان مقاله:

The role of vitamin D receptor in the pathogenesis of MS

محل انتشار:

چهارمین کنگره بین المللی و شانزدهمین کنگره ملی ژنتیک (سال: 1399)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Sanaz Seifialan - *Department of Genetics, Faculty of Biological Sciences, Tarbiat Modares University*

Mahbubeh Rojhannezhad - *Department of Genetics, Faculty of Biological Sciences, Tarbiat Modares University*

Frangis Ataei - *Department of Biochemistry, Faculty of Biological Sciences, Tarbiat Modares University*

Mehrdad Behmanesh - *Department of Genetics, Faculty of Biological Sciences, Tarbiat Modares University*

خلاصه مقاله:

Background and Aim: Multiple sclerosis (MS) is one of the most common chronic inflammatory diseases of the central nervous system and about more than ۲ million people suffer from it in worldwide. The main cause of the disease is not known yet, but many genetic and environmental factors increase the risk of disease. Studies have shown that lowering serum vitamin D levels increases the risk of MS. Vitamin D is a fat-soluble vitamin that binds to DNA in target cells through its receptor in the form of VDR / VDR homodimer or VDR / RXR heterodimers. Vitamin D plays a key role in reducing inflammation and strengthening the body's immune system, it activates a wide range of biological functions or suppresses many gene transcriptions. **Methods:** In this study we have reviewed several studies and analyzed microarray data (GSE1۴۸۹۵) investigating gene expression patterns from peripheral blood samples taken from ۱۸ CIS MS patients and ۹ healthy controls. **Results:** Molecular mechanisms and metabolic pathways affecting multiple sclerosis are poorly understood. Data analysis shows a decrease in the expression of family members of the nuclear receptor, like vitamin D receptor, as a calcium-dependent transcription factor. Vitamin D has a direct effect on the proliferation of T lymphocytes by increasing the expression of T regulatory cells and reducing the production of proinflammatory cytokines such as interferon gamma. When vitamin D receptor gene expression is suppressed, it prevents T cell apoptosis. This process of suppressing apoptosis is further supported by the expression of genes involved in activating the apoptotic mechanism, such as family members of tumor necrosis factor, including FasL. Therefore, it seems that a series of immune events and a possible regulatory role of vitamin D receptor are involved in the pathogenesis of MS, which requires further study and experimental confirmation. **Conclusion:** Molecular mechanisms and metabolic pathways affecting multiple sclerosis are poorly understood. Data analysis shows a decrease in the expression of family members of the nuclear receptor, like vitamin D receptor, as a calcium-dependent transcription factor. Vitamin D has a direct effect on the proliferation of T lymphocytes by increasing the expression of T regulatory cells and reducing the production of proinflammatory cytokines such as interferon gamma. When vitamin D receptor gene expression is suppressed, it prevents T cell apoptosis. This process of suppressing apoptosis is ... ,further supported by the expression of genes involved in activating the apoptotic mechanism

کلمات کلیدی:

multiple sclerosis, vitamin D receptor, T cell

