

Curcumin used in multiple sclerosis as an autoimmune disease

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background: Multiple sclerosis (MS) is a chronic neurological disease that is a major cause of disability in young adults. MS is generally considered to be an autoimmune disease, although both genetic and environmental factors seem to have a role in its pathogenesis. Recent studies have shown that curcumin ameliorates multiple sclerosis, rheumatoid arthritis, psoriasis, and inflammatory bowel disease in human or animal models.

Materials and Methods: A narrative review to identify the benefit of Curcumin in the treatment of MS was done base by searching the international data bases including PubMed and Google scholar in 2015 using the following Key words: Curcumin and Multiple Sclerosis.

Results:Curcumin inhibits neuroinflammation through multiple mechanisms in MS. Recent evidences from EAE studies suggest Th17 expansion in circulation is a crucial step in disease initiation. It is well known that Th17 cells differentiation is induced by coexistence of IL-6 and TGF- β , enhanced by TNF- α and IL-1 β , maintained and expanded by IL-23. Curcumin inhibits the differentiation and expansion of Th17 cells in circulation induced by inflammatory cascade, enhances the expression of ZO-1, an important tight junction protein, and down-regulates expression of CXC chemokines and receptor. Curcumin resulting in the repair of the BBB decrease Th17 cells to transmigrate across the BBB and the inhibition of autoreactive T cells transmigration can reduce neuroinflammation. Curcumin has a lipophilic property and can pass through all cell membranes and thus exerts its

intracellular effects. Through its various anti-inflammatory effects, it may have a role in the cure of MS.

Conclusions: It seems that, Curcumin can be effective in alleviating of the MS symptoms by several anti inflammatory mechanisms. Based on the main findings detailed above, cur cumin will lead to a promising treatment for MS. The clinically studied chemical properties of cur cumin and its various effects on MS shows the possibility to do further research and develop better drugs based on cur cumin for treating MS.