From September 1-20, 2008 Montreal hosted the World Congress on Multiple Sclerosis (MS). Presentations included 4 encouraging reports on low dose naltrexone (LDN).

Animal Models of MS

Dr. Ian Zagon and his team from the University of Pennsylvania presented 3 papers on the effects of LDN in animal models of MS. Experimental autoimmune encephalomyelitis (EAE) is a disorder induced in animals that serves as a model of MS in humans.

1) Opioid growth factor and low dose naltrexone inhibit immunological responses associated with experimental autoimmune encephalomyelitis.

The first phase of EAE is characterized by the production of pro-inflammatory cytokines, inflammation, and the recruitment of activated T-lymphocytes and antibodies to the site of inflammation, the central nervous system. The immune system launches an aggressive response to the attack, which contributes to disease progression. In one experiment mice with induced EAE were treated with LDN and observed.

Results

Both LDN and opioid growth factor (OGF), an endorphin that rises in response to LDN, were shown to repress disease progression. Study data demonstrate that early in the induction of EAE, treatment with either OGF or LDN reduces the number of lymphocytes primed to target myelin/oligodendrocyte glycoprotein (MOG) the primary myelin antigen targeted in MS. This study also suggests the mechanism by which the disease process occurs in MS and shows that treatment with either OGF or LDN suppresses T cell proliferation. This, in turn, stops disease progression.

2) Low-dose naltrexone (LDN) prevents development or delays onset and reduces severity of experimental autoimmune encephalomyelitis in mice.

Mice were pre-treated with LDN before EAE was induced to show the effects of LDN on disease development and severity.

Results

Both LDN and OGF were shown to offer protection against the development of EAE and delay onset compared to untreated mice. In treated mice that developed EAE the disease was not as severe as EAE in untreated mice.

3) The complete blockade of opioid receptors with naltrexone exacerbates experimental autoimmune encephalomyelitis in a mouse model.

Doctor Zagon explained that for naltrexone to reduce T cell activation and reduce antibody production, naltrexone must be used intermittently. He confirmed this is an
experiment using high doses of naltrexone. In mice treated with high doses of naltrexone, EAE developed quickly and disease was more severe.

4) Low dose naltrexone improves quality of life in patients with multiple sclerosis: a randomized, masked, placebo-controlled trial.

Dr. Bruce Cree presented the results of his 8-week trial of LDN in multiple sclerosis. The trial was a single center, randomized, double masked, placebo controlled, double-cross over study of naltrexone using 4.5 mg daily to evaluate Quality of life. The multiple sclerosis quality of life inventory (MSQLI) was used for the evaluation. The study involved 80 subjects and 70 patients completed the trial.

Results

Compared to the placebo, LDN significantly improved the mental health component summary score. Quality of life was improved on all parameters. Pain was also reduced by LDN. The study showed that short-term use of low dose naltrexone was well tolerated and appears to benefit mental components of MS. Physical improvements were not noted in this study, which could be related to its short duration.

Resource:
Summary abstracts, World Congress on Treatment and Research in Multiple Sclerosis, September 17-20, 2008.