



Integrative Management Strategies

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MS Society of Canada

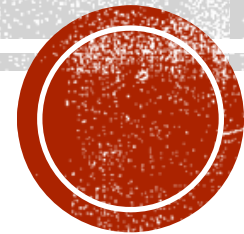
- Mission Statement: To be a leader in finding a cure for multiple sclerosis and enabling people affected by MS to enhance their quality of life.

MULTIPLE SCLEROSIS

Integrative Management Strategies

Dr. Eric Muradov ND

May 2017



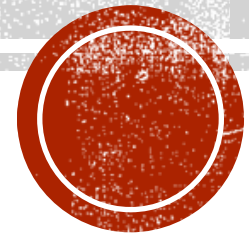
NATUROPATHIC DOCTOR

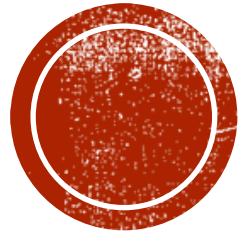
Standard western training

Natural options

Address the cause

We do offer phone consults





TRUMED.CA / ARTICLES

This presentation is an annotation of some of my most popular blog posts

Check back for regular posts every 2-4 weeks

TruMed.ca – Click on Articles

Borage
Vitamin D
LDN

CBD
Thiamine
Curcumin

**MULTIPLE
SCLEROSIS**

Integrative
Management



BORAGE & GLA

- Gamma linoleic acid (GLA)
- Significant sources are Borage, Black current & Evening Primrose (Kapoor 2006).
- Previous trials in 1977 and 1978 in MS patients by Bates showed little efficacy from GLA supplementation. The 1977 trial was in progressive MS patients and the 1978 trial used 340mg GLA in RRMS patients over 2 years.
- 2007 Clinical trial where 36 MS patients were given Borage (either 5 grams – 1.2g GLA or 14 grams -3.36 g GLA) over 18 months.
- Relapse rate for the active treatment arms was initially 1.5 per year and reduced to 1.1 for the low dose GLA and .35 in the high dose (Harbige 2007).
- It is clear that the previous trials by Bates were using doses too small to be significant and even a gram of GLA yields less than optimal results.
- It may be necessary to also provide supplemental vitamin E to avoid endogenous depletion



VITAMIN D

- Full-skin exposure to Sunlight or UVB is equivalent to a 10,000 IU daily dose of vitamin D3.
- VitD4MS study where the vitamin D dose was escalated up to 40 000 IU daily and then back down over a 52 week period. – **Less relapses, Less response to autoantigens (incubation)**
- Vitamin D was given daily, orally with calcium, which in animal studies is needed for full D immune modulating activity.
- **At a serum level of 250nmol/L the urinary calcium levels started to rise.**
- **Therefore it was suggested to use doses that result in serum levels just below this threshold.**



VITAMIN D

A bit of math:

- We know that a 2000 IU dose results in serum levels of 50 nmol/L.
- Therefore, a dose of 10 000 should result in levels around 200nmol/L.
- This would avoid coming too close to 250 (which would get from a dose of about 12 000 IU). - which is where urinary calcium starts to rise.
- Therefore, 10 000 IU per day will bring the blood levels to a point slightly below 250 and would avoid increases in urinary calcium.
- 2016 trial by [Sotirchos](#) safely gave 10 000 IU for 6 months with immunomodulatory effects (reduced IL-17, more naïve T cells and less effector T cells) – not really long enough for relapse reduction

I still recommend to test calcium levels

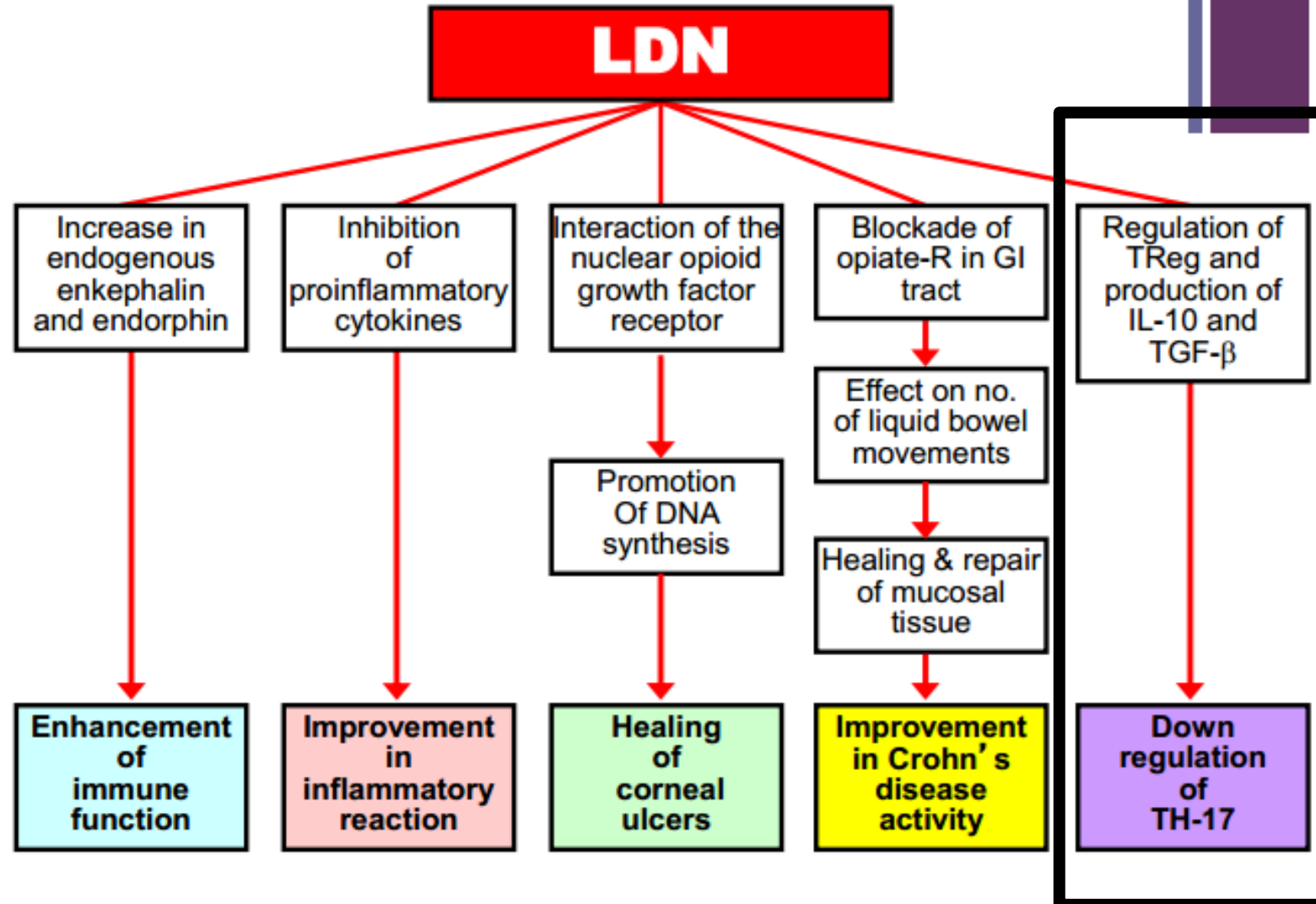


LDN

- Naltrexone at its full dose was approved by FDA in 1984 for the treatment of opioid addiction.
- Bernard Bihari, MD, discovered the effects of Naltrexone, in low doses, in humans in the 1980s.
- Low-dose naltrexone (LDN) has been demonstrated to reduce symptom severity in conditions such as fibromyalgia, Crohn's disease and multiple sclerosis and has astounding case reports in a number of cancers. **EICT.ca for cancer reports!**
- I use LDN in my clinical practice and it is low cost and often extremely well tolerated
- Block TLR4 Receptor signalling: modulates immune response - **microglia**



+ MECHANISM OF ACTION OF LDN



LDN

- **"Low Dose Naltrexone for Treatment of Multiple Sclerosis: A Retrospective Chart Review of Safety and Tolerability"** published in 2015. This article analyzed the medical records of 215 MS patients, aged 18 to 65 years, seen in an MS clinic for a 7-year period which is an excellent resource regarding long term safety and efficacy.
- The safety, tolerability, and effectiveness of LDN (at doses of 3.5mg) on fatigue was analyzed.
- Seventy seven percent (n = 166) of patients taking LDN for any period of time did not report any side effects.
- Nearly 60% (n = 128) of patients receiving LDN for any period of time reported a reduction in fatigue with LDN therapy (effects are typically subtle)
- More importantly, 130 patients (60%) stated that LDN stabilized or improved their disease and 75% of the patients reported improved or stabilized quality of life.
- Only nine patients reported that LDN reduced the quality of life, and 8% of the patients had the perception that their disease increased while on LDN. Given the waxing and waning state of MS it is unclear if these declinations could truly be attributed to LDN.



LDN

- LDN is a slow acting treatment and it usually takes 3-4 months to work in its full capacity. So we may pair LDN with anti-inflammatory treatments while we're waiting for its action to start working.
 - **Titrated upwards, moreso as an immunomodulatory treatment not for symptoms**
- LDN in it's full dose of 4.5mg may increase spasticity in MS patients therefore either reduced doses are given (3 - 3.5mg) or patients can use full dose LDN (4.5mg) and add anti-spasticity agents like CBD (see my CBD post!)
- Prior to the review I discussed, LDN had been studied in a 17 week study in MS patients and the results suggested an improved quality of life but the trial was clearly too short to see impact on more serious parameters like relapse frequency.



CBD

- The principal active components of Cannabis (the "Cannabinoids") are **THC** (tetrahydrocannabinol) and **CBD** (cannabidiol).
- THC is responsible for the psychoactive effects (the "high") whereas CBD has no psychoactive effects and actually reduces the psychoactive effects of THC.
- Spasticity (muscle stiffness) is a common symptom of multiple sclerosis which is intermittent or sustained activation of muscles resulting in mild to extreme muscular tightness.

- **Spasticity**

- **Sleep**

- **Immune Modulation**



CBD

- CBD also appears to have anti-inflammatory effects as seen in the animal model of MS.
- CBD treatment reduced pro-inflammatory cytokines and increased BDNF (a growth factor for nerve cells) and CBD also promoted neuronal survival.
- Anti-inflammatory effects demonstrate preliminary evidence in Rheumatoid Arthritis, Fibromyalgia, Nerve pain and Inflammatory Bowel Disease.



CBD

- **Sativex** is a cannabis-based oral spray pharmaceutical product containing THC and CBD in a 1:1 ratio and is usually recommended once patients have failed other anti-spastic therapies.
- One such study found an average of 6 sprays per day (2.5mg CBD : 2.7mg THC therefore doses of **about 15 mg of each**) - 12 sprays is usually the maximum daily divided dose.
- In three international studies, THC/CBD was found to reduce spasticity (in clinical responders) by 57%, 35% and 28% in Germany, UK and Spain respectively with doses ranging from 4 to 8 sprays.
- The most common adverse events reported in trials were dizziness (in particular), sleepiness, fatigue, **feeling of intoxication** and a bad taste.
- Based off of the Sativex trials we expect singular effects from CBD in the 12-36 mg range for spasticity.
- Immunomod dose is high based of animal studies



B1 - THIAMINE

- 2013 Journal Article "**High dose THIAMINE improves fatigue in Multiple Sclerosis**" was published.
- The evaluation of the fatigue was measured 20 days after the beginning B1
- Improvement of the fatigue was shown in 14 RRMS patients out of 15 (93.3% of the cases)
- Improvement was within hours from the first IV administration or within 2–3 days after the beginning of the oral therapy – 600-1500 oral and 100mg IV
- Fatigue improved by an average of 41%

Taken up into NS - But the rate of transport is generally slow

I use IV Thiamine with other B Vitamins – B12 in particular



B1 - THIAMINE

- Benfotiamine strongly increases thiamine levels in blood
- Doses of up to 300mg daily of Benfotiamine have been used in Diabetes.
- Sulbutiamine, is a fat-soluble B1 derivative, that increases thiamine in the brain.
Doses of up to 600mg of Sulbutiamine have been used in Chronic Fatigue.

Therefore I propose using Sulbutiamine, partially, if not wholly in MS patients
Sulbutiamine and Methylcobalamin (B12) if you don't have IV/IM access
+- ALCAR

We use IV B's and can bridge between treatments with Sulbutiamine
Sulbutiamine 200-600 daily + 5mg B12 orally or 5k IM every few weeks, and 2-3 g ALCAR



CURCUMIN

- Curcumin is the active component in Turmeric (Yellow Spice!)
- **Multiple Sclerosis** - The treatment of rats in the animal model of MS (EAE - Experimental autoimmune encephalomyelitis) with curcumin significantly reduced the clinical severity of EAE mediated through decrease of IL-17.⁹
- Axon degeneration is a hallmark of several central nervous system (CNS) disorders, including Multiple Sclerosis. Curcumin can protect axons from degeneration by reducing nitric oxide mediated damage.¹⁰
- Human evidence in Psoriasis and Crohn's – which are similar immunologically to MS



CURCUMIN

- Curcumin can be given orally as a daily anti-inflammatory treatment for MS patients in addition to immunomodulatory medications or other alternative anti-inflammatory agents like CBD, LDN and Alpha Lipoic Acid.
- I'd suggest aggressive treatment of a MS relapse with IV Curcumin or High dose oral in conjunction with IV Glutathione with or without steroids depending on the specific situation.
- Best use is day to day as an anti-inflammatory – theracurmin 2x 2-4/day or meriva 500mg 2/d



QUESTIONS?

- This is just scratching the surface of integrative MS treatment
- My MS Blog: TruMed.ca – Click on Articles – Share 😊

