

Treatment of fibromyalgia syndrome with Super Malic: a randomized, double blind, placebo controlled, crossover pilot study

Journal of Rheumatology, May 1995;22(5):953-8

Russell IJ, Michalek JE, Flechas JD, Abraham GE.

FROM ABSTRACT

OBJECTIVE.

To study the efficacy and safety of Super Malic, a proprietary tablet containing malic acid (200 mg) and magnesium (50 mg), in treatment of primary fibromyalgia syndrome.

The 3 primary outcome variables were measures of pain and tenderness but functional and psychological measures were also assessed.

RESULTS.

With dose escalation and a longer duration of treatment in the open label trial, significant reductions in the severity of all 3 primary pain/tenderness measures were obtained without limiting risks.

CONCLUSIONS.

These data suggest that Super Malic is safe and may be beneficial in the treatment of patients with fibromyalgia.

THESE AUTHORS ALSO NOTE:

"One proposed explanation for the soft tissue pain experienced by patients with fibromyalgia was that muscle energy metabolism may be compromised."

Abnormal blood flow may deprive muscle of sufficient oxygen and other nutrients.

Several studies show that the muscles of patients with fibromyalgia are deficient in ATP and magnesium.

"Malic acid, a naturally occurring, nontoxic, organic dicarboxylic acid, and magnesium are both known to be involved in the processes of generating ATP."

Malic acid and magnesium "play a pivotal role in mitochondrial ATP synthesis."

A rationale for the combined use of malic acid and magnesium in the treatment of fibromyalgia has been proposed, and a prior study treating fibromyalgia patients with malic acid and magnesium "reported dramatic relief from pain." This study was designed to test the hypothesis.

Malic acid is "widely distributed in the vegetable kingdom including concentrations of 4 to 8 g/l of apple juice."

Studies have shown that malic acid plus magnesium can increase mitochondrial production of ATP energy.

During this study, no "adverse events could be attributed to malic acid and/or magnesium."

In this study, "the results from the open label trial were very encouraging."

The best results were observed from "use of a higher dosage and longer duration of treatment" with malic acid and magnesium.

Study results "indicate that it may be beneficial on the painful fibromyalgia symptoms in dosages in excess of 8 tablets/day for up to 6 months."

[8 tablets X 200 mg per tablet = 1600 mg malic acid per day]

[8 tablets X 50 mg per tablet = 400 mg magnesium per day]

The proposed mechanism for the benefit of malic acid plus magnesium supplementation is that they "increase production of ATP."

"Energy generation may not be normal in fibromyalgia since ATP is low in muscle tender points and in red cells."

KEY POINTS FROM DAN MURPHY

- 1) An explanation for the soft tissue pain experienced by patients with fibromyalgia was that muscle energy production of ATP may be compromised. [This has significant relevance to low level laser therapy because of their ability to increase the production of cellular ATP.]
- 2) Also, abnormal blood flow may deprive muscle of sufficient oxygen and other nutrients. [This has significant relevance to chiropractic because of the evidence that chiropractic spinal adjustments improve spinal mechanics, which inhibits the sympathetic nervous system and improves blood flow.]
- 3) The muscles of patients with fibromyalgia are deficient in ATP and magnesium.
- 4) Malic acid and magnesium "play a pivotal role in mitochondrial ATP synthesis."
- 5) Malic acid is "widely distributed in the vegetable kingdom including concentrations of 4 to 8 g/l of apple juice."

6) Malic acid plus magnesium can increase mitochondrial production of ATP energy.

7) The best results were observed from "use of a higher dosage and longer duration of treatment" with malic acid and magnesium.

8) Study results "indicate that it may be beneficial on the painful fibromyalgia symptoms in dosages in excess of 8 tablets/day for up to 6 months."

[8 tablets X 200 mg per tablet = 1600 mg malic acid per day]

[8 tablets X 50 mg per tablet = 400 mg magnesium per day]

9) The proposed mechanism for the benefit of malic acid plus magnesium supplementation is that they "increase production of ATP."

The malic acid plus magnesium supplement I use in the management of fibromyalgia patients is:

Complete FM from Nutri-West: 800-443-3333

Each capsule contains 294 mg of malic acid and 59 mg of magnesium.

Each capsule also contains a balance of compounds that have also been shown to benefit patients with fibromyalgia:

grapeseed extract, betatine HCL, silymarin extract, bromelain, papain, trypsin, lipase, amylase, pancreatin, lecithin (phosphytidal choline), l-leucine, l-valine, glucosamine sulfate, N-acetyl glucosamine, and ornithine alpha keto-glutarate.

This article suggests that the minimum dosage should be 6 tablets per day (2 with each meal), which would supply:

1764 mg of malic acid and 354 mg of magnesium

Another article suggests that the optimal dosage should be 9 tablets per day (3 with each meal), supplying:

2646 mg of malic acid and 531 mg of magnesium