A NEW ADDITION TO THE MOSS NUTRITION PROFESSIONAL LINE – INFILAMASELECT™

One of the basic tenets of Entry Level Clinical Nutrition™ (ELCN) is the recognition that chronic inflammation is a major initiator and propagator of virtually all chronic illness. To help address the myriad inflammation-related issues affecting your patients, it has been our intent since first launching the Moss Nutrition Professional (MNP) line to offer effective products to help optimize inflammatory mediators. Thus, after developing our line for three years, I am very happy to be introducing to you our first new product in this category: InflammaSelect™.

As you will see from the enclosed technical sheet, InflammaSelect™ is a combination herbal, nutrient and enzyme formula that contains many of the well-researched ingredients (Boswellia, bromelain, MSM, etc.) typically found in high quality, broad spectrum inflammation support products.

However, one InflammaSelect™ ingredient may surprise you: 175 mg of niacinamide. Why would a simple B vitamin be included in an inflammation optimization product, and why in such a significant quantity? To answer this question, I would like to review a fascinating paper of great clinical relevance that is devoted to the anti-inflammatory aspects of niacinamide (aka niacinamide), “Nicotinamide is a potent inhibitor of proinflammatory cytokines” (Ungerstedt JS et al. Clin Exp Immunol, Vol. 131, pp. 48-52, 2003).

This paper describes an in vitro study that investigated the impact of niacinamide on a model of inflammation that was set up in a laboratory environment. What makes this model so clinically significant, particularly for our many patients suffering from intestinal and digestive disorders, is that it examines how metabolites produced by enteric microflora create systemic inflammation in leaky gut scenarios.

In the scientific world, these pro-inflammatory metabolites are known as “endotoxins” or lipopolysaccharides (LPS). Ungerstedt et al state:

“Endotoxin or lipopolysaccharide (LPS) from the outer membrane of gram negative bacteria stimulates the production and release of proinflammatory cytokines via binding of LPS binding protein, LBP, to monocyte membrane bound CD14.”

The authors continue:

“The proinflammatory cytokines play a central role in the pathophysiology of gram negative sepsis, and have been demonstrated to appear early after endotoxin injection in healthy volunteers. There are a number of reports on proinflammatory cytokines contributing to disease severity, organ failure, and poor outcome in sepsis and septic shock.”

The above quotes indicate the potentially dire consequences of compromised intestinal lining integrity. Far beyond being a simple contributing factor to some of the chronic maladies that our patients deal with every day, leaky gut, when taken to an extreme, can lead to acute systemic illness and even death. How well niacinamide performs in a laboratory setting to counteract leaky gut-derived systemic inflammation is the subject matter of the Ungerstedt et al study, as described on the following page.
Niacinamide – not just a B vitamin

As per Ungerstedt et al, the specific anti-inflammatory properties of niacinamide include the following:

“Niacinamide, the amide derivative of vitamin B₃, has been shown to exert a number of anti-inflammatory properties, e.g. inhibition of inducible NO synthase (iNOS), free radical scavenging, suppression of MHC class II expression and intracellular adhesion molecule ICAM-1 expression on endothelial cells, all possibly due to the ability of nicotinamide to inhibit poly (ADPribose) polymerase (PARP).”

And what is PARP? Ungerstedt et al continue:

“PARP is a nuclear DNA binding enzyme involved in DNA repair in response to genotoxic stress.”

While at first glance, the ability of PARP to repair DNA in response to genotoxic stress would appear to be a good thing, making inhibition by niacinamide an undesirable outcome, the authors point out that activation of PARP can be a problem:

“Activation of PARP, which has been shown to occur upon endotoxin administration, depletes intracellular NAD+, slowing down the rate of glycolysis, electron transport and ATP formation, which can result in cell dysfunction and cell death.”

From a clinical perspective, it is interesting to note that activation of PARP, which is clearly inhibited by niacinamide, plays a major role in creating many of the adverse systemic effects we typically associate with leaky gut:

“Activation of PARP is a central mechanism of endotoxin induced acute pulmonary inflammation, and PARP activation was observed after endotoxin stimulation in our endotoxaemia model.”

How does niacinamide affect endotoxin-induced inflammation?

The in vitro experiment performed by Ungerstedt et al successfully used niacinamide in an attempt to attenuate endotoxin-induced inflammation in whole blood, as outlined below:

“In the present study, a two-hour incubation of whole blood with 1 ng/ml endotoxin resulted in a massive increase of the inflammatory cytokines IL-1β, TNFα, IL-6 and IL-8. Already at an in vitro concentration of 4 mmol/l nicotinamide, there was a significant reduction of the IL-6 response, and at 40 mmol/l nicotinamide, the IL-1β, IL-6, and TNFα responses were reduced by more than 95%, and the IL-8 levels reduced by 85%.”

It is important for us to note that the amount of endotoxin used in the experiment was similar to what might be found in a clinical situation:

“The endotoxin concentration used for stimulation and the cytokine concentrations obtained were of similar magnitude to what is observed in human endotoxaemia.”

With the above in mind, the authors conclude:

“These results demonstrate that nicotinamide has the capacity to dose dependently down-regulate the cytokine response in a model with several similarities to human inflammatory disease.”

SOME FINAL THOUGHTS

There are many excellent enzyme- and herbal-based inflammation optimization products available to you in the supplement marketplace. While InflammaSelect™ certainly shares attributes with these other products, MNP InflammaSelect™ uniquely contains niacinamide, a constituent that offers direct benefit to a source of inflammation that is almost universal in our chronically ill patients: increased gut permeability. In addition, InflammaSelect™ includes meaningful levels of L-glutamine to provide further nutritional support for healthy gut lining integrity.

InflammaSelect™ - Moss Nutrition
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