

S-Adenosyl-L-Methionine (SAM) Update, Part I

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My initial interest in s-adenosyl-l-methionine (SAM) stemmed from reading Dr. Luke Bucci's book *Nutrition Applied to Injury Rehabilitation and Sports Medicine*. I wrote an article about SAM which appeared a few years ago in *Dynamic Chiropractic*.¹ My interest in SAM at that time was based on its ability to reduce pain in individuals with osteoarthritis. Unfortunately, SAM was not available as a supplement in this country. In that article I asked the nutrition industry to make SAM available; however, as the years went by it appeared this would not happen, mainly due to costs.

SAM Defined

S-adenosyl-l-methionine (SAM) is a naturally occurring intermediate of methionine metabolism. It is a methyl donor and considered a sulfhydryl amino acid.² Sulfhydryl amino acids are sources of sulfate, which is a critical substance for glycosaminoglycan production and is also important in some detoxification reactions. Sulfhydryl amino acids are additionally involved in cell redox potential and, thus, are considered to be a type of antioxidant.³

SAM and Osteoarthritis

What originally excited me about SAM was its effects on osteoarthritis. For example, in one study researchers compared 400 mg of SAM dosed three times a day against 400 mg of ibuprofen dosed three times a day in 150 patients who suffered from hip and/or knee osteoarthritis. The researchers found that SAM was more effective at increasing range of motion as well as decreasing pain and spasm than ibuprofen. The gastric side effects of ibuprofen were not exhibited.⁴

SAM was also studied against other anti-inflammatory medications such as naproxen,⁵ indomethacin,⁶ and piroxicam.⁷ SAM was just as effective as non-steroidal anti-inflammatories in all of these studies, but did not display the gastric side effects that were seen in patients who took NSAIDs. In this same journal, Koenig authored a two-year study on SAM. It was a multicenter trial involving ninety-seven patients with osteoarthritis. The areas of pathology included the cervical spine, lumbar spine, hip, and knee. These patients were under the care of ten general practitioners and took SAM at a dose of 600 mg a day for two weeks and then 400 mg a day for the next 24 months. The results showed that SAM reduced pain on movement, pain at rest, and morning stiffness throughout the length of the trial. The positive effects of SAM administration were noticed after the first week of therapy.

As we all know, those who suffer from degenerative joint disease are unable to perform activities of normal daily living without pain and discomfort. In turn, this often leads to frustration and depression. An interesting side note is that SAM administration reduced the depressive feelings in this patient group.

A Bleak Future

My initial excitement about SAM was blunted in an August 1995 discussion with Dr. Luke Bucci. The following is an excerpt from that discussion:

Dr. Andersen (GDA): Dr. Bucci, what do you think about s-adenosyl^amethionine, also known as SAM?

Dr. Bucci (LB): Oh, that's very interesting. As you know, it isn't a true amino acid. It's an activated metabolite of methionine. So, it's a methyl donor, and it's a vital methyl donor.

GDA: What kinds of effects does it have on the body?

LB: It has anti-inflammatory effects. It promotes anything made from a methyl group which is DNA and RNA, and DNA regulation and creatine. So, it's very important for many, many things.

GDA: Can it be used for people with arthritis or injuries?

LB: Yes, it has been used in people with arthritis.

GDA: What were the results?

LB: It looks about as good as glucosamine does, which is excellent. In fact, it does so well that European drug companies have studied it. It is safer than non-steroidal anti-inflammatories and heals better than nonsteroidals do, but cost is the problem. So, they are licensing it for use in liver disease and other things where it is an antioxidant. Unfortunately, they are dropping the whole collective tissue angle with SAM.

GDA: Would adequate demand lower cost?

LB: I have some connections who are looking into that right now.

GDA: How is absorption and what are the dosages?

LB: SAM is absorbed so well you only need around 2 gm per day to achieve a nice, therapeutic effect. It's extremely important and used for so many things. Cost is the only drawback.⁸

Conclusion

I am again writing about SAM because it is finally available from the Allergy Research Group in Hayward, California. You can call 800 information for their number. Next month, we will continue our discussion of SAM with exciting news about its application for patients suffering from fibromyalgia and depression.

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