



PIC QUESTION OF THE WEEK: 12/06/10

Q: Is there a role for SAME in the treatment of depression?

A: SAME (s-adenylmethionine; also known as ademetionine and s-adenosyl-l-methionine) is an endogenous substance that serves as a methyl donor in transmethylation reactions associated with the synthesis and/or metabolism of neurotransmitters, nucleic acids, hormones, phospholipids, and some drugs. SAME appears to play a key role in the synthesis of serotonin, dopamine, and norepinephrine. Most currently available antidepressants (SSRIs and SNRIs) increase central levels of serotonin and/or norepinephrine by inhibiting their re-uptake. Older tricyclic antidepressants *block* the effects of serotonin and/or norepinephrine. In theory, administration of SAME should result in increased levels of these neurotransmitters, thus providing potential benefit in the management of depression. This compound has been used, with variable results, for several years as an alternative remedy for depression. A number of earlier small studies concluded that SAME was as effective as tricyclic antidepressants in the treatment of mild depression. A recent study published in the American Journal of Psychiatry demonstrated the benefit of SAME when added to current antidepressant therapy. In this placebo-controlled study, approximately 75 patients with depression and a poor response to conventional therapy (SSRIs, SNRIs, etc.) were treated with SAME. Those receiving the supplement had a 10.3% higher Hamilton Depression Rating Scale (HAM-D) response and 14.1% greater incidence of remission than the placebo treated group. In this study, the dose of SAME was 400 mg twice daily. The only adverse effect reported was an increase in supine blood pressure in the SAME treated group. The authors concluded that SAME can be a safe and effective adjunct in patients with depression who are non-responsive to SSRI therapy. SAME has also been used for the treatment of a wide range of other disorders including osteoarthritis, fibromyalgia, alcohol-related liver disease, and cholestasis; however, efficacy data is limited. Oral doses of 600 to 1,600 mg/daily (titrated to avoid gastrointestinal intolerance) have been used in some of the conditions mentioned above. Because of poor oral bioavailability, the use of SAME has often been studied using the parenteral formulation. In summary, addition of SAME to standard drug regimens may be beneficial in some patients with depression.

References:

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- Mischoulon D, Fava M. Role of S-adenosyl-L-methionine in the treatment of depression: a review of the evidence. *Am J Clin Nutr* 2002;76(suppl):1158S-61S.

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