

COMMENTARY

S-Adenosyl homocysteine—a better indicator of vascular disease than homocysteine?^{1, 2, 3}

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It is widely accepted that elevated plasma total homocysteine is an independent risk factor for vascular disease. The relation is believed to be causal, but there is no generally accepted mechanism for the pathophysiology involved. The metabolic precursor of homocysteine in all tissues is S-adenosylhomocysteine (AdoHcy). AdoHcy is present in normal human plasma at concentrations approximately 1-500th of those of homocysteine, a fact that presents difficulties in measurement. The requirement for specialized equipment, complicated time-consuming methodology, or both is a reason that measurement of plasma AdoHcy has not generally been carried out in large studies. A recently published rapid immunoassay for AdoHcy in human plasma should make measurement of this important metabolite available for general use. Advantages of the measurement of plasma AdoHcy include 1) a smaller overlap of values between control subjects and patients, and thus the possibility of observing significant differences in fewer samples, 2) an accepted mechanism of metabolic activity as an inhibitor of all S-adenosylmethionine-mediated methyltransferases, and 3) evidence (from recent studies) that a higher plasma concentration of AdoHcy is a more sensitive indicator of vascular disease than is a higher plasma concentration of homocysteine.

Key Words: S-Adenosyl homocysteine • S-adenosyl methionine • homocysteine • vascular disease • methionine • risk factors • plasma

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