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S-adenosylmethionine levels in the diagnosis of Pneumocystis carinii pneumonia in patients with HIV infection.

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BACKGROUND: S-adenosylmethionine (AdoMet) is a key molecule involved in methylation reactions and polyamine synthesis. Pneumocystis carinii are unable to synthesize this molecule and have been shown to scavenge this metabolic intermediate from the plasma of rats during active infection. A prior study involving humans strongly suggested that low levels of plasma AdoMet are sensitive and specific indicators of acute infection. METHODS: From March 2004 through January 2006, we collected plasma AdoMet levels from patients with human immunodeficiency virus (HIV) infection and either confirmed Pneumocystis carinii pneumonia (PCP), confirmed pulmonary tuberculosis, or confirmed bacterial pneumonia. We compared levels in patients with PCP with those in patients with other diseases and also monitored changes in levels during treatment of PCP. RESULTS: Initial AdoMet levels were significantly lower in patients with PCP, and there was no overlap between the groups. Among patients with PCP, levels of AdoMet increased with successful treatment. CONCLUSIONS: Measurement of plasma AdoMet levels in patients with HIV infection who have pulmonary infections can identify those with PCP.

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