



ABSTRACT

Thiamine Pharmaconutrition in Sepsis: current evidence on safety and efficacy

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Sepsis is a life-threatening condition characterized by multiorgan dysfunction due to an exaggerated host response to infection associated with a homeostatic failure. Sepsis is also characterized by low thiamine levels, which are associated with illness severity, hyperlactatemia, and poor clinical outcomes. However, caution is needed with interpretation of thiamine blood concentration in critically ill patients. C-reactive protein (CRP) should always be measured to determine the patient's inflammatory status. Recent strategies to improve clinical outcomes in sepsis include high-dose intravenous micronutrients.

This presentation will summarize the biological properties of thiamine and the effects of pharmaconutrition with high-dose thiamine in critically ill adult patients with sepsis or septic shock. Examination of the most up-to-date evidence confirms that Recommended Daily Allowance (RDA) supplementation is relatively safe for thiamine-deficient patients. However, pharmaconutrition with high-dose thiamine as monotherapy or as combination therapy (with vitamin C or corticosteroids) has failed to show improvements in clinical outcomes.

A better understanding of the pharmacokinetic (PK) and pharmacodynamic (PD) profiles of thiamine is needed. In the future, well designed and better powered clinical trials are urgently warranted before any specific recommendations can be made regarding pharmaconutrition with high-dose micronutrients in the critical care setting.

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