



Mahmoud Abdo

USM University, Malaysia

Title: The role of oral ascorbic acid administration in combination with IV N-acetylcysteine in delaying inflammatory cascade in sepsis: A Case Report

Abstract:

Sepsis is a life-threatening emergency that arises owing to a dysregulated host response to infection, leading to existence organ dysfunction. Vitamin C administration has led to a lower mortality rate in sepsis. N-acetylcysteine (NAC) treatment during sepsis improves hepatic function and enhances tissue oxygenation. The objective of this case report is to investigate the synergistic effect of the combination of vitamin C, thiamine, and NAC in delaying sepsis cascade and prolongation of survival time. In this case report, an oral dose of vitamin C 500 mg three times daily in combination with IV thiamine 100 mg three times daily, IV NAC, and hydrocortisone stress dose resulted in 12 days of survival of an immunocompromised patient with ventilator-associated pneumonia on single anti-pseudomonas beta-lactam antibiotic. The patient was a 60-year-old Malay female with previous bone marrow transplantation surgery and a medical history of ischemic stroke on phenytoin and valproate therapy. The patient was transferred to a medical ward in Penang General Hospital, Malaysia, due to community-acquired pneumonia. She was on ceftriaxone for five days, then sedated and ventilated in the ICU, with a shift to cefepime for three days, which was then changed to meropenem for nine days until the last day of life. Total anti-pseudomonas coverage was 12 days. The patient had multiple comorbidities from phenytoin-induced hepatic encephalopathy, acute kidney injury, and three sessions of hemodialysis. IV vitamin C was not available, so an oral dose was administered with potential efficacy in delaying the sepsis inflammatory cascade, leading to the use of a single (not double) anti-pseudomonas antibiotic for 12 days. Prolonged survival duration may be expected in the case of normal bone marrow patients with ventilator-associated pneumonia sepsis. In conclusion, Vitamin C, thiamine, and NAC combination resulted in delayed sepsis progression for 12 days and the survival of the immunocompromised patient on a single anti-pseudomonas beta-lactam antibiotic.

## Biography

Dr. Mahmoud Abdo is an Egyptian pharmacist graduated in 2006, then finished diploma of clinical pharmacy in 2009 (Ain shams university) & Pharm.D in 2013 (Cairo university). He is master holder of clinical pharmacy from USM University in Malaysia in 2018 with 2 international publications. Dr. Mahmoud has both experiences as lecturer & clinical pharmacy practice in disciplines of critical care, infectious diseases & internal medicine. Furthermore, he has experience in cost reduction of antibiotic use, pharmacometrics of Defined Daily Doses & Days of Therapy, empirical therapy for various infections & de-escalation according to clinical response and true cultures. Dr. Mahmoud can interpret local antibiograms, haematology & biochemistry lab results with doses adjustment individually, so he is hoping for Ph.D. position in infectious diseases specialty.