

The Prevalence of Methemoglobin in HIV Infected Patients on Chronic Dapsone Therapy for Prophylaxis of *Pneumocystis jirovecii* Infection.

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Introduction

Dapsone, an antimicrobial agent commonly used for the prophylaxis of *Pneumocystis jirovecii* pneumonia (PCP) in HIV+ patients, has been implicated as a cause of acquired methemoglobinemia. The prevalence of methemoglobinemia in HIV+ patients on prophylactic Dapsone is unknown. It is the hypothesis of this study that HIV+ patients on Dapsone have higher levels of methemoglobin than those not taking the medication.

Methods

We identified HIV+ patients receiving Dapsone for PCP prophylaxis from an urban HIV clinic. During their scheduled clinic appointments, patients were screened for methemoglobin (SpMet) using the Masimo Radical-7 pulse CO-Oximeter. Methemoglobin levels (%) and pertinent clinical data were recorded. We also obtained and recorded data from a representative group of HIV+ controls not receiving Dapsone.

Results

There were 22 patients who received Dapsone for \geq one month and 14 controls. There was no statistically significant difference in gender, age, race, smoking status or creatinine between the two groups. The median CD4 count was lower in the Dapsone group (205 vs 345 cells/mL³, Interquartile range (IQR) 75-267 vs 203-510 cell/mL³, $p=0.017$), as was median hemoglobin concentration 12.4 vs 14.9 g/dL, IQR 11.0 – 14.3 vs 13.5 – 15.7 g/dL, $p=0.003$). Patients taking Dapsone had higher median SpMet levels (1.3 vs. 0.6%, IQR 0.6 – 2.5 vs 0.5 – 0.8%, $p= 0.006$). Of the patients taking Dapsone, 7 (31.8%) had MethHb levels \geq 2% and 3 (13.6%) had levels \geq 3%. We consider levels $>3\%$ to be clinically significant. The maximum level on the Dapsone group was 5%, while the maximum in the control group was 1.1%.

Conclusions

Dapsone therapy is associated with a clinically significant elevation of SpMet levels in about 15% of HIV+ patients taking the medication for PCP prophylaxis. As noninvasive pulse CO-Oximetry is now available, providers should consider the routine screening of persons receiving Dapsone for methemoglobinemia.