

Carbon Monoxide Poisoning in Patients Presenting to the Emergency Department with a Headache in Winter Months.

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Background

Carbon monoxide (CO) poisoning is an important reason for emergency department (ED) visits during winter months, but because there are no specific symptoms it can be difficult to diagnose. We aimed to determine the frequency of CO poisoning in patients presenting to the ED with headaches during winter months and evaluate the ability of non-invasive carboxyhaemoglobin measurement (SpCO) to screen for CO poisoning in these patients.

Methods

SpCO measurement values of adult patients were measured non-invasively with a Rad-57 Pulse CO-Oximeter. Patients whose initial SpCO reading was over 10% underwent a venous blood draw for laboratory determination of invasive carboxyhaemoglobin (COHb) measurement. Patients with a invasive COHb level of over 10% were diagnosed with CO poisoning. Percentage of screened patients with suspected and occult CO poisoning, the distribution of patients with CO poisoning by time of day of the ED visit and the screening sensitivity of SpCO to detect CO poisoning were calculated.

Results

483 patients presenting with headaches were screened with SpCO measurement. Thirty-eight had a mean SpCO value of over 10%, 31 (6.4% of the study population) of which had elevated COHb confirmed by laboratory determination. SpCO measurement, therefore, had a screening sensitivity of 82% for CO poisoning. Twenty-four (77%) of the CO poisoning cases were suspected and seven (23%) were occult. CO poisoning was detected more frequently in patients visiting the ED after midnight and during morning hours.

Conclusions

CO poisoning should be kept in mind in patients presenting to the ED with a headache. SpCO is an effective screening tool to detect CO poisoning in these patients.