

Carbon monoxide poisoning

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arterial blood gases and carboxyhemoglobin were not evaluated.

When the team inspected the car, they found two holes in the floor for the bolts that should attach the back seat to the floor. Both holes were covered by a bed sheet. The woman who had first become unconscious and subsequently died had been sitting directly over the one hole and the woman who fainted had been sitting over the other hole. The hole under the dead woman was directly above the exhaust pipe of the car that had a 10cm crack immediately opposite the hole. In addition, the rubber seal on the rear door was broken. The test of the exhaust showed that the CO level was 6.4%, which exceeds the normal upper levels (4.6%).

--Reported by Mr. Ali Mohammed Al-Shahrani and Dr. Mohammed Saeed Al-Qahtani, Field Epidemiology Training Program

Editorial note: CO is an odorless and invisible gas with an affinity for hemoglobin over 240 times that of O₂. CO exposure results in elevated carboxyhemoglobin concentration in the blood and a decreased capacity to transport O₂ to tissue. The resultant anoxia of vital tissues (brain and heart) is responsible for life-threatening

manifestations. Mild manifestations include headache, nausea, dimness of vision and fainting. Severe manifestations include coma, convulsions, myocardial ischemia (ECG changes), and death.

The nearly simultaneous presentation of headache in all nine persons confined in a closed vehicle with a faulty exhaust system and with fainting, dizziness and unconsciousness in three of them, suggests that this outbreak was due to CO poisoning. The most severe manifestations and earlier onset corresponds to the closest and most direct exposure to exhaust gasses (the two women sitting over the holes). While the car was in motion, airflow probably forced the exhaust gases away from the holes. Parking the car at the gasoline station probably allowed more exhaust gases to enter.

Exposure to CO, and thereafter CO poisoning, increased generally with the growth of the use of the new products of the modern world. CO exposure comes from three sources:¹ 1) CO in the surrounding environment produced mainly by the automobile, from domestic charcoal burning and space heaters, 2) occupational exposure and 3) cigarette, cigar and pipe smoke in confined places.

In the United States, the unintentional deaths due to CO poisoning result mainly

from exposure to motor-vehicle exhaust and occurs more often during the cold months of the year.² In Saudi Arabia, CO poisoning is not reportable, but emergency rooms in the hospitals often receive cases in winter due to exposure to burning charcoal smoke in closed places.

This report should alert physicians, especially in the health centers and hospitals serving towns adjacent to highways. They should keep CO poisoning in mind if they receive patients with headache, fainting, dizziness, dim vision or unconsciousness while riding in cars. 100% O₂ therapy should be started immediately, if CO poisoning is suspected.³ People need to be warned to maintain correctly the exhaust systems of their vehicles.

References:

1. Kurt TL. Chemical asphyxiants. In: Rom E, editor. Environmental and Occupational Medicine. Boston: Little, Brown and Company 1983.
2. CDC. Unintentional deaths from carbon monoxide poisoning--Michigan, 1987-1989. MMWR 1992; 41(47).
3. Goldfrank LR, Lewin NA, Kirstein RH, Weisman RS, Flomenbaum NE. Carbon monoxide. In: Goldfrank LR, Flomenbaum NE, Lewin NA, Weisman RS, Howland MA. Goldfrank's toxicologic emergencies. Norwalk: Appleton & Lang 1990: 751-756.

Acute hemorrhagic conjunctivitis

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11 years and the sex ratio was 1:1 for both AHC cases and unaffected persons. The 34 households with multiple AHC cases were more likely to share beds and towels among family members than households with only a single case (OR= inf., P<0.001). In the 34 households with multiple AHC cases, secondary cases were more likely to share towels (OR=24, 95%CI 6.3-93), tissue (OR=7.6, 95%CI 1.8-34), and beds (OR=7.0, 95%CI 2.8-18) than unaffected family members. In 14 families using eye drops to treat AHC, 42 out of 47 family members contracted AHC after treating another family member with eye drops compared with 16 of 29 family members who did not give eye drops to an AHC case (OR=9.3, 95% CI=2.4, 36).

New AHC cases fell to zero three weeks after a two day health education effort in Goz Al-Nakasah mosques and school science classes. This effort stressed the mode of transmission and not sharing personal items.

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Editorial note: Although AHC was apparently widespread in Makkah schools, the investigation indicated that AHC transmission was highly localized to Burmese in Goz Al-Nakasah. AHC transmission in schools was probably secondary to transmission at home. AHC spread in these homes was principally due to sharing of personal items. Home medication with eyedrops added to transmission of AHC by increasing hand contact of unaffected person to the eyes of AHC cases. The

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