

CO Poisoning Without Obvious Source

Kaynağı Belirsiz CO Zehirlenmesi

Musa Salmanoğlu¹, Yalçın Önem²

¹Department of Internal Medicine, İzmir Military Hospital, İzmir, Turkey

²Department of Internal Medicine, Gülhane Military Medical Academy Haydapaşa Teaching Hospital, İstanbul, Turkey

We read with interest the article by Seyedjavady et al. (1) entitled "CO poisoning without obvious source: a case report", where they reported four cases of carbon monoxide (CO) poisoning. The authors noted that all of their cases sustained CO poisoning following having a shower and drew attention to the fact that none of the bathrooms contained water heaters, which were installed in the kitchen or basement instead. The symptoms of the patients varied from flu-like symptoms such as nausea and headache to unconsciousness. The authors also confirmed the diagnosis by measuring carboxyhaemoglobin levels of the patients.

After providing details regarding the medical history and symptoms of patients, the authors claimed that the CO could have been transmitted through the water system, e.g. from the kitchen or basement to the bathroom, and ultimately resulted in poisoning. We would rather approach this route of transmission with suspicion, since CO is sparingly soluble in water. Its solubility in water at 20°C is 2.3 mL/100 mL H₂O. Therefore, we think that the transmission of CO in a water system is unlikely.

A reasonable explanation may be CO accumulation in the house as the heater was working while the patients were taking shower. A blocked or malfunctioning chimney/flue would have prevented

CO from being exhausted from the home. As a result, CO would accumulate in the house. Chronic and subtle CO exposure is a well-known and well-documented condition leading to various clinical pictures, as described above (1). Poorly functioning heating systems may cause CO production, and, unless significant enough to result in severe poisoning, chronic mild exposure will result in non-specific complaints such as chronic nausea, fatigue, headache, etc. Case 1 had a history of chronic headache, which may be due to chronic CO exposure. The potential mechanism to explain CO exposure in all four cases reported in the article may be stealthy leakage from the heaters, which may further increase in cases where they are actively functioning, such as when running a bath, as stated in the article. One more point to note would be the need for screening all households for potential exposure. Last but not least, regular maintenance of heating systems, including chimneys/flues, is essential to prevent CO poisoning.

References

1. Seyedjavady HH, Saeedi M, Shahsavarinia K, Ebrahimpour P, Pashapour P. CO poisoning without obvious source: a case report. JAEM 2012; 11: 183-4.

Correspondence to / Yazışma Adresi: Yalçın Önem, Department of Internal Medicine, Gülhane Military Medical Academy Haydapaşa Teaching Hospital, İstanbul, Turkey Phone: +90 216 542 20 20-3216 e.mail: yalonem@yahoo.com

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