



## Features of Carbon Monoxide Poisoning in China

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### Dear Editor-in-Chief

Carbon monoxide (CO), as a product of incomplete combustion of organic substances due to insufficient oxygen to enable complete oxidation to carbon dioxide (CO<sub>2</sub>), is toxic but colorless, odorless, tasteless, and initially non-irritating. CO poisoning occurs after prolonged exposure with a potentially lethal dosage over 100 ppm(1). It is such an common and classic disease that people who live in a developed country using the electricity as their primary clean energy are hard to imagine how deadly it is or how many casualties it could cost every year in a “less developed” country, like, China.

Chinese economy is skyrocketing in the last two decades indeed, unfortunately, this booming fact is not a very balanced one, as a result of which, CO poisoning has outgrown its own features in China than western countries.

1. Etiology of CO poisoning. Statistically, the leading causes of CO poisoning in western countries are meteorological disadvantages that go against clearing off of CO, insufficient combustion in addition to ventilation of fireplaces, increased car exhausting in a very restricted space, etc (2). However, in China, this sequence is different. In less developed area, especially remote villages in northern China, heating by burning coals using honeycomb-briquette furnace inside the house is preferred by local residents, as a result of which, accidents linked to these activities like

chimney jam, ventilation failure are found accountable for most of the CO poisoning in these areas. Although these cases are mostly sporadic but considering the population base of China, the estimated death toll could be up to thousands by nationwide every year (3).

2. Susceptible population of CO poisoning. Urban citizens in China are prone to using central heating system provided by Heating Supply Service (HSS) in winter, but in remote areas where HSS has not covered yet, local residents constitute the majority of CO poisoning susceptible population. Unfortunately but expectably speaking, this group of people usually earns lower income and has less knowledge on the upcoming danger of furnacing inside the house. The worst part is, most of these potential victims have not medically insured by National Medical Support Program for prompt first-aid services (4).

3. Awareness of CO poisoning and hyperbaric oxygen therapy (HBOT).

Most of the CO poisoning victims in China are not aware of the hazards of excess CO exposure. Some of them used to banking the furnace before sleeping to keep it from extinguishing and giving heat constantly, and the others who live in bigger cities of China tend to use air conditioning system in an in-door garage; even Hotpot, a very famous traditional Chinese cuisine using charcoals as a comburent during dining has been reported a

complice of CO poisoning because diners usually have hotpot in a closed in-door spaces for a relatively long time (5-6).

Many victims or potential victims in China do not have the basic knowledge on the first-aid of CO poisoning like accelerating ventilation, getting away from the high-concentration CO area immediately, etc, which makes them more vulnerable to this disease. Furthermore, the universal understanding of CO poisoning's priority therapy, the hyperbaric oxygen therapy (HBOT), needs improving too. Not only the ordinary population but some paramedics or medical staff lack even the basic understanding of this "most effective way of dissociating hemoglobin from CO", unintentionally influenced the outcome of patients suffered from CO poisoning.

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