THE HIDDEN DANGER OF CARBON MONOXIDE POISONING

Headache
Dizziness
Irritability
Confusion/Memory loss
Disorientation
Nausea and vomiting
Abnormal reflexes
Difficulty in coordinating
Difficulty in breathing
Chest Pain
Cerebral Edema
Convulsions/Seizures
Coma
Death

SIGNS AND SYMPTOMS

Often, several members of the same family or those in a given building will complain of the same symptoms. Children are thought to be more susceptible to carbon monoxide poisoning than adults. Some people may not suspect that CO poisoning is occurring until major symptoms appear. Carbon Monoxide poisoning can mimic gastroenteritis (nausea and vomiting). Other manifestations may cause the appearance of what may appear to be a neurological or psychiatric disorder. High risk groups include infants, the elderly, pregnant women, and anyone with a previous history of cardiac insufficiency or chronic obstructive lung disease.

MEDICAL CONSEQUENCES

Cerebral edema (swelling of the brain) is also a common result of severe carbon monoxide poisoning. This life threatening condition entails the destruction of brain cells by compressing them into themselves within the cranial compartment. Drugs that are normally used for the treatment of cerebral edema, like Dexamethasone and Mannitol, do not seem to be of assistance in the treatment of CO induced cerebral edema. Studies have shown that cerebral edema caused by CO poisoning can cause delayed neurological problems that involve the “higher” or cognitive functions, and may cause a Parkinsonian-like brain syndrome.

CAUSATIVE FACTORS

Other incidents have been reported in apartments where gas stoves are being used for heat. In at least one case, carbon monoxide poisoning was caused by the use of a charcoal grill within an apartment’s bathtub. More than fifty percent (50%) of all carbon monoxide incidents occur within homes. Twenty percent (20%) of all incidents occur in businesses of various types.

TREATMENT

Move the victim(s) to fresh air, this will only relieve immediate symptoms of acute poisoning, remember if you have chronic poisoning that is low level and that has gone on for some time your deterioration may be gradual so it could be some time before you notice.
Activate the Fire/Emergency Medical Service System, if victim(s) are experiencing any symptoms, if the fire department is called and they have the equipment ask them to record the CO PPM (parts per million of carbon monoxide in the air). This could be used to help your doctor diagnose your illness, also should you decide to pursue a legal claim may well help your legal team.
Monitor for respiratory problems, get a COHb test to check for carbon monoxide levels in the blood.
Ventilate the affected area

Upon arrival, it is recommended that Basic Life Support (BLS) (e.g. EMT) personnel should:

Evaluate for respiratory tract irritation, bronchitis, or pneumonic.
Administer humidified 100% oxygen by tight- fitting face mask. Assist ventilations as needed
Monitor Vital Signs
Monitor level of consciousness
Consider early transport to a Hyperbaric Oxygen Chamber for severely poisoned patients
Place the patient in a position of comfort and keep them warm
It is recommended that Advanced Life Support (A.L.S.) (e.g. Paramedic) personnel should:

Further evaluate the respiratory tract for dysfunction or possible compromise – intubate and assist ventilation as needed
Draw a blood sample for Carboxyhemoglobin analysis
Provide 100% humidified oxygen, do not delay administration of oxygen while performing blood sampling
Administer normal saline or other crystalline parental fluids at 2/3 to 3/4 of normal maintenance rates
Prepare for the possibility of generalized seizures in severe cases. Give diazepam (Valium) in 2-10 mg. doses (as needed) to terminate and control seizure activity
Perform electrocardiogram monitoring of the patient, be especially aware of ventricular ectopic beats and heart blocks. EKG changes seen most commonly in CO patients are ST segment depression, T-wave abnormalities, atrial fibrillation, and PVCs.
Any patient found unconscious, seizing, or with EKG changes and with an associated history should be treated as a severe carbon monoxide poisoning until proven otherwise
Consider direct transport to a Hyperbaric Oxygen therapy facility, with Oxygen being administered enroute, for severely poisoned patients
If the patient's history suggests any possibility of CO Poisoning, treat him/her as though they were exposed

PREVENTION AND CONCLUSIONS

Many lives could be saved and much disability prevented if citizens could learn to recognize and prevent the dangers of carbon monoxide poisoning. Preventive efforts such as checking furnace flues, chimneys, and vents could help to alleviate the hazard. The use of good common sense in not using open flames, ovens and other appliances not intended for heating, could reduce the number of carbon monoxide related incidents. It is also recommended that homeowners have their complete heating systems checked before every heating season.

Only by being aware of the peril, and understanding the nature of the hazard, can we help to prevent unnecessary exposures to deadly carbon monoxide. By understanding the mechanism of injury, we can be better prepared to treat the effects of this toxic product. In this way, it is expected that the number of people who succumb to carbon monoxide's "deadly clutches" can be reduced.