## [ID-P#063] Suicide by Charcoal Burning: A Case Report on Intentional Carbon Monoxide Poisoning

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**Background and Objective**: Suicide by charcoal burning is considered as one of the most common suicide methods in Asia, reaching a rate of 30% of suicides in Taiwan, 10-25% in Japan and Hong Kong, and increasing incidences in South Korea, Singapore and Iran. However in the Philippines, these have not been reported in published literature. This aims to describe the first documented case of carbon monoxide poisoning after deliberate asphyxiation by charcoal burning.

**Case Report**: This is a case of 23-year old female who had dizziness and loss of consciousness after she attempted asphyxiation by allegedly locking herself in the bathroom with a lighted charcoal. She was exposed for 10 hours before she was found lying on the bathroom floor. She was brought to the Emergency Department (ED) via self-conduction. Upon arrival at the ED, patient was conscious with noted carboxyhemoglobin level of 9.9%. Patient was hooked to non-rebreather mask (NRM) at 15lpm. Plain cranial computed tomography (CT) scan revealed areas of bilateral hypodensities in the globus pallidus. Co-oximetry monitoring was done with noted downward trend of carboxyhemoglobin levels. Patient was eventually transferred and admitted to another institution for definitive psychiatric treatment.

**Discussion**: Charcoal burning in an enclosed space leads to incomplete combustion resulting to emission of toxic substances including carbon monoxide, volatile organic compounds, nitrogen oxides, polycyclic aromatic hydrocarbons, and fine particulate matter. Carbon monoxide is a systemic asphyxiant that impairs proper utilization of oxygen by its high hemoglobin binding affinity, direct cellular toxicity, and increase in nitric oxide activity. Its diagnosis relies on the correlation of the clinical findings with carboxyhemoglobin levels. The management is focused on securing the airway and giving 100% oxygen to enhance dissociation of carboxyhemoglobin. The definitive treatment of choice is still hyperbaric oxygen therapy. Complications include delayed neurologic sequelae manifesting with cognitive impairment and affective disorder. There is a need to institute toxicovigilance on deliberate asphyxiation by charcoal burning especially in the Philippines where it has not been extensively reported.