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Methanol poisoning outbreak concomitance with COVID-19 epidemic in Iran

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ABSTRACT

We report outbreaks of methanol poisoning in some regions of Iran and its concomitance with the COVID-19 outbreak and its possible origins. Methanol poisoning outbreaks have placed a heavy burden on hospitals that are highly ready for admission of COVID-19 patients.

KEYWORDS

methanol poisoning**,** COVID-19**,** outbreaks**.**

INTRODUCTION

Methanol poisoning outbreak is characterized as a rapid rise in the number of cases of methanol intoxication in a brief period. Based on their statistics, government health authorities should define the expected number of methanol poisoning for each year (1). Based on the definition provided by WHO, even one case of unintentional exposure to methanol may be called an outbreak of methanol poisoning (1). Based on the Iran Ministry of Health and Medical Education report, the occurrence of more than three cases of methanol intoxication in one area within 24 hours suggests an outbreak, and in such cases immediate public information should be considered (2). WHO has reported that alcoholic beverages are produced informally and illegally in many parts of the world, as well as in countries where alcohol is prohibited (3). Incorrectly controlled methods of distillation of illegal alcoholic products are the leading source of cases of methanol intoxication (3). As the most common cause of methanol intoxication in Iran is the consumption of methanol-contaminated illicit alcoholic drinks (2). Aghababaeian et al. study has announced the incidence of methanol poisoning outbreaks in 21 provinces of the total of 31 Iran's provinces, in 768 cases in 2018 (4). In late December 2019, a new coronavirus, 2019-nCoV, launched the outbreak of unknown pneumonia from Wuhan across China, which now has posed major health threats to public health. The COVID-19 outbreak caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been spreading in many countries, including Iran. With the COVID-19 epidemic in Iran and the widespread closure of various organs in Iran to prevent the disease spread, we have witnessed another lethal outbreak at this time due to methanol intoxication. Unexpected widespread floods in 2018-2019 have exposed Iranian alcohol producers to a shortage of ethanol-producing raw materials; however, ethanol production was as much needed and even more than the country needed. By the year 2020, with a sharp increase in the need for alcohol for coronavirus disinfection, the legal restrictions on ethanol production were reduced to meet the nation's required alcohol supply. Simultaneously, epidemics create a state of fear in society. The study of Qian et al. in China indicated that Psychological and behavioral reactions to COVID-19 have been drastic since the start of the epidemic and society is experiencing anxiety toward the COVID-19 threats (5). This state of Psychological reactions also could remain after outbreaks. In a cohort analysis by Mak et al., psychological problems were reported by 58.9% among survivors of the SARS epidemic in 2002 (6). These psychological problems are not just

for ordinary people, as an increase in alcohol drinking was seen in health care providers after SARS epidemics (7). With the spread of the coronavirus, there has been a lot of talk about the disease among people, sometimes far from reality. With the spread of coronaviruses around the world and its psychological effects on people, there have been rumors about drinking alcohol for preventing the disease that had even led to death. While in the WHO articles and researches, there is no information that drinking alcohol is effective for preventing coronavirus, there were reports of people in Iran drinking illicit alcohol to avoid COVID-19 infection. Many of these beverages were containing high levels of methanol that led to many occurrences of methanol poisonings outbreaks in various regions of Iran. Methanol poisoning in Iran could be considered as one of the psychological comorbidities of COVID-19. Methanol poisoning is usually caused by methanol used in the manufacture of synthetic alcohol instead of ethyl alcohol owing to its low price (8). But there may be other possible scenarios that could be responsible for methanol poisoning outbreaks. There have been cases when alcohol sold as medical alcohol or alcohol-based hand sanitizers, it was containing significant amounts of methanol. Some news report cases of fraudsters deceiving people by adding vitreous to methanol to discolor it and sell methanol as ethanol.

During the COVID-19 outbreak preparing hospitals for admission of methanol poisoning patients that may be in critical condition for the next few hours of intoxication, may impose a giant pressure on hospitals for managing both outbreaks of COVID-19 and methanol poisoning. Because proper and timely treatment plays a key role in the success of outbreaks and can help reduce the number of patients requiring special beds in sensitive conditions, such as needed in coronavirus epidemic, the diagnosis of methanol poisoning patients referring to the Emergency Department is crucial.

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