



LETTER TO THE EDITOR

Ali Banagozar Mohammadi ^{1(ACDEF)}, Maryam Vahabzadeh ^{2(ABCDEFG)}

A concurrent outbreak of COVID-19 and methanol poisoning in Iran: Is this the time to make amendments to alcohol drinking laws?

¹ Sina Educational, Research and Treatment Center, Department of Internal Medicine,
School of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran

² Medical Toxicology Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

Dear Editor,

In late 2019, cases of a highly contagious viral disease, namely coronavirus disease (COVID-19), were reported from China and shortly spread throughout the world population resulting in an unforeseeable pandemic. On February 19, 2020, Iran first reported two confirmed cases of COVID-19, both of which died. Along with other affected countries, partial lockdown and preventive measures were started to take action to help break the spreading chain of the deadly virus. Together with several hygienic recommendations published by health authorities, there was misleading information in social media regarding the disinfecting effect of alcohol ingestion on viruses entering the GI tract. Before long, numerous cases of poisoning with toxic alcohols were referred to Iranian clinical toxicology centers with a range of complications from GI symptoms like nausea and vomiting to more deadly effects such as end-organ failure, blindness, and even death.^{1,2}

The World Health Organization (WHO) recommended “70% ethyl alcohol to disinfect reusable dedicated equipment and also sodium hypochlorite at 0.5% (equivalent 5000ppm) for disinfection of frequently touched surfaces in homes or healthcare facilities” along

with several other countermeasures such as social distancing and wearing masks against virus transmission.² For this reason, the Iranian population rushed to use alcohols to disinfect hands and surfaces that lead to a shortage of alcohols in pharmacies. Based on false information from social media, many individuals began drinking alcohol in the hope of disinfecting the virus within their bodies. In Iran, however, any production, consumption or distribution of alcoholic beverages is prohibited by law since 1979, and alcohol utilization is limited to medical and industrial use. For this reason, alcoholic beverages are obtained through unlawful means such as personal home production and illegal imports from some neighboring countries.^{3,4}

Such legislation not only makes it impossible for Iranian Food and Drug Administration authorities to control the quality of alcoholic beverages, but also creates a vicious cycle of supply and demand, providing sub-standard alcohols as a toxic mixture of methanol and ethanol to illegal consumers. Due to such a challenge, methanol poisoning is quite common in Iran. Because of the lack of a comprehensive toxicology registry system in Iran, there is no accurate number for methanol poisonings throughout the COVID-19 pandemic, and the precise mortality

Corresponding author: Maryam Vahabzadeh, e-mail: vahabzadehm@mums.ac.ir

Participation of co-authors: A – Author of the concept and objectives of paper; B – collection of data; C – implementation of research; D – elaborate, analysis and interpretation of data; E – statistical analysis; F – preparation of a manuscript; G – working out the literature; H – obtaining funds

Received: 13.06.2020 | Accepted: 5.08.2020

Publication date: September 2020

rates due to methanol poisoning might be underestimated.³ However, the Iranian Legal Medicine Organization (LMO) announced referral of 728 deaths between February 19 and April 19, 2020, due to alcohol poisoning, the majority of which involved methanol. Among these, 471 deaths were because of methanol poisoning comprising 422 men, and 49 women.⁵ This was considered the greatest methanol mass poisoning nationally and internationally in such a short timeframe.¹ Outbreaks of methanol poisoning and COVID-19 have similarities regarding their high prevalence and there is a direct relationship between the degree of side effects and availability of treatment facilities for patients. In contrast, they have significant differences; for instance, the majority of COVID patients are elderly or those with comorbidities (e.g. hypertension, diabetes, coronary heart disease), while morbidity and mortality in methanol poisoning are most prevalent amongst young and healthy people.⁶⁻¹²

Therefore, until appropriate scientific policies for the prevention of alcohol poisoning have not been adopted, and appropriate diagnostic and treatment facilities have not been provided for the poisoned patients, particularly patients with methanol poisoning in Iran, this poisoning will continue. On the other hand, if proper arrangement and policies for alcohol consumption and trade be made and appropriate information provided for citizens, the rate of poisoning from toxic alcohols in Iran can be decreased. Although methanol poisoning is preventable, situations like COVID-related lockdown and stress can increase the risk of toxic alcohol poisoning in Iran.¹³

Considering new legislative measures for alcohol consumption and poisoning with toxic alcohols can prevent further irreparable consequences on public health.³ Therefore, we recommend that: 1- The Ministry of Health of Iran pay special attention to providing essential facilities for timely diagnosis and treatment of poisonings along with proper training of poisoning course in medical education. International institutes such as WHO may help in this regard; 2- Legislators in Iran make amendments to the law for production, sale, and consumption of alcohols in order to improve the society health and prevent the production of toxic alcohols as beverages; 3- The Food and Drug Administration of Iran strengthen its supervision over pharmaceutical companies for production of alcohol-containing products.

References

1. Soltaninejad K. Methanol mass poisoning outbreak: a consequence of COVID-19 pandemic and misleading messages on social media. *Int J Occup Environ Med.* 2020;11:e1-e3.
2. WHO. Coronavirus disease (COVID-19) technical guidance: infection prevention and control. Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>. Accessed May 17, 2020.
3. Delirrad M, Mohammadi AB. New methanol poisoning outbreaks in Iran following COVID-19 pandemic. *Alcohol Alcohol.* 2020;55(4):347-348.
4. Shokoohi M, Rahimi-Movaghar A, Noroozi A, Kararouzi M. A public health approach to alcohol use and its related harms in Iran. *The Lancet Public Health.* 2019;4:e175-e176.
5. The Iranian Legal Medicine Organization. Tehran, I.R. Iran. Referral of more than 700 deaths due to alcohol poisoning since February 19 (Esfand). *Original article in Persian.* Available at: <https://lmo.ir/news/95987.htm>. Accessed July 22, 2020.
6. Wu C, Chen X, Cai Y, et al. Risk factors associated with acute respiratory distress syndrome and death in patients with coronavirus disease 2019 pneumonia in Wuhan, China. *JAMA Intern Med.* 2020;180(7):1-11.
7. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *JAMA.* 2020;323(13):1239-1242.
8. Chen H, Guo J, Wang C, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. *The Lancet.* 2020;395(10226):809-815.
9. Weiss P, Murdoch DR. Clinical course and mortality risk of severe COVID-19. *The Lancet.* 2020;395(10229):1014-1015.
10. Massoumi G, Saberi K, Eizadi-Mood N, Shamsi M, Alavi M, Morteza A. Methanol poisoning in Iran, from 2000 to 2009. *Drug Chem Toxicol.* 2012;35(3):330-3.
11. Hassanian-Moghaddam H, Nikfarjam A, Mirafzal A, et al. Methanol mass poisoning in Iran: role of case finding in outbreak management. *J Public Health (Oxf).* 2015;37(2):354-359.
12. Paasma R, Hovda KE, Hassanian-Moghaddam H, et al. Risk factors related to poor outcome after methanol poisoning and the relation between outcome and antidotes—a multicenter study. *Clin Toxicol.* 2012;50(9):823-831.
13. Clay JM, Parker MO. Alcohol use and misuse during the COVID-19 pandemic: a potential public health crisis?. *The Lancet Public Health.* 2020;5(5):e259.