

Sodium nitrite ingestion in a suicide attempt: First reported case in the middle east

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Sodium nitrite (NaNO_2) is a water-soluble, white-yellow-colored crystalline powder with various practical applications including use as a food preservative, antimicrobial, and coloring agent. The use of sodium nitrite has recently emerged as an increasingly popular method of suicide. The first reported case of intentional sodium nitrite ingestion occurred in 1979. Two cases were reported in Tokyo, Japan, one in 1996 and another in 2000. Between 2000 and recent years, there has been a distinct lack of cases with only 1 case in New Zealand in 2010 reported. However, since 2019 the number of reported suicides using sodium nitrite has significantly increased compared to previous years. Sodium nitrite ingestion can be fatal, depending on the dose ingested. It causes ferrous iron to be oxidized to ferric iron (Fe^{3+}), thus losing its ability to bind oxygen and resulting in a greater affinity for oxygen in the remaining Fe^{2+} heme groups that are present in the same hemoglobin structure. Thus, hemoglobin is transformed into Methemoglobin (MHb), which has a lower capacity to transport oxygen and release it into the tissue. Methemoglobin cannot bind oxygen which results in impaired oxygen transport, subsequent hypoxia, and lactic acidosis. We report the first case to ever be seen in the middle east, in the UAE, Sharjah. A 21-year-old male known case of depression on treatment presenting with an acute onset abdominal pain and multiple episodes of vomiting. When the patient arrived at our ED, he had a low GCS with severe central cyanosis and hypoxia. Fortunately, the patient's first degree relative informed the team that she had witnessed him ingest sodium nitrite powder as an attempt to commit suicide, which hastened the identification of the causative toxin and thus patient's management and the delivery of its antidote, methylene blue, which led the patient to a full recovery. In this case report we would like to highlight and discuss early identification and delivery of antidote in such patients, the clinical and lab findings that support the diagnosis and the possible complications that can arise.