Correspondence

Letters to Editor

Regarding:
Huntington GR, Pennington JM. Fatal Methaemoglobinaemia Due To Intentional Sodium Nitrite Poisoning. *Acute Med*. 2021; **20**(2):148-150. PMID: 34190743.

Keywords
toxicology, methaemoglobinaemia, sodium nitrite, poisoning

Huntington and Pennington's recent article[1] on a case of Fatal Methaeglobinaemia Due To Intentional Sodium Nitrate Poisoning was very interesting, is a useful overview of initial diagnosis and management, and has helped remind the readers of this potentially life-threatening condition.

We somewhat disagree with their interpretation that 15% methaemoglobin (metHb) with haemoglobin (Hb) 160 g/L represents a greater quantity of abnormal haemoglobin than 20% metHb with Hb 80 g/L for example, and may produce a more severe clinical picture.

In our opinion, Ludlow's definition where the percentage of metHb is calculated by dividing the concentration of metHb by the concentration of total Hb is more accurate. The percentage of metHb is likely to be a better indicator of illness severity than overall concentration, as although the metHb may interfere with the normal Hb, it is the absolute normal Hb concentration that will determine symptoms including breathlessness. [2]

In addition to methylene blue, which can, itself, cause methaemoglobinaemia, there are some other treatments to consider if methylene blue is not effective, not available or contraindicated . These include, repeat methylCYP450 inhibitors (e.g. cimetidine) or exchange transfusion. Individuals with G6PD deficiency may not produce sufficient NADPH to reduce methylene blue to leukomethylene blue, potentially rendering the therapy ineffective. Furthermore, methylene blue might induce haemolysis in G6PD-deficient patients, therefore, in these patients, an alternative treatment with cimetidine or possibly ascorbic acid or exchange transfusions should be considered.[3]

***Mercy Ariyo*[1]**
Senior Clinical Fellow in Acute Medicine.
***Nick Murch*[1]**
Acute Medicine Consultant
***Adil Al-Lawati*[2]**
Acute Medicine Consultant

Affiliations
1. Royal Free Hospital, London NW3 2QG, UK
2. Royal Hospital, Muscat 00115, Oman
mercy.ariyo@nhs.net

Declaration of competing interests
Nothing to declare.

References

1. Huntington GR, Pennington JM. Fatal Methaemoglobinaemia Due To Intentional Sodium Nitrite Poisoning. *Acute Med*. 2021; **20(2)**:148-150. PMID 34190743. https://pubmed.ncbi.nlm.nih.gov/34190743/
2. Ludlow JT, Wilkerson RG, Sahu KK, Nappe TM. Methemoglobinemia. 2020 Sep 4. In: StatPearls. StatPearls Publishing Treasure Island. PMID 30726002 https://www.ncbi.nlm.nih.gov/books/NBK537317/
3. Al-Lawati A, Murch N. Acquired Methemoglobinaemia. *Sultan Qaboos Univ Med J*. 2012;**12(2)**:237-241. doi:10.12816/0003120 https://pubmed.ncbi.nlm.nih.gov/22548146/