Methemoglobinemia: Challenges in Diagnosis and Management

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Sir,

Methemoglobinemia is one of the most rewarding medical emergencies if promptly approached. We congratulate Krishna et al for their excellent work in saving lives of two patients suffering from methemoglobinemia. Through this correspondence, we wish to convey other relevant information to JAPI readers regarding methemoglobinemia based on our previous experiences.

Importance of History

First step in diagnosis is suspicion. Knowledge of most common potential drugs is essential to consider methemoglobinemia. Krishna et al mentioned about EMLA cream and oral dapsone in their report. It is prudent for readers to know that even topical dapsone can cause methemoglobinemia. Also, apart from medication history, asking about any family members suffering from similar illness can sometimes help in diagnosing familial methemoglobinemia.

Bedside Tests in community health centres

At peripheral medical centres, confirmatory tests like co-oximetry devices may not be available. For those places simple bedside tests can be fruitful. A semiquantitative test using “methaemoglobin colour chart” can be used to have an approximate idea of severity of methemoglobinemia. This test was originally developed by Shihana et al from Sri Lanka which was published in WHO bulletin (14 June 2016) as well and subsequently incorporated in the Sri Lankan national guidelines and management of poisoning.

Diagnostic pitfall while interpreting G6PD test

Krishna et al very well said that methylene blue is contraindicated in G6PD positive cases. One pitfall which internists should be aware of is the false negativity of G6PD test during active haemolysis as the newly circulating reticulocytes tend to have higher percentage of G6PD enzyme thereby negating the actual deficiency in an individual during testing for G6PD. Also, just a word of caution that co-oximetry may not be useful in monitoring percentage of MethHb in congenital cases.

Treatment challenges

Apart from being detrimental to use in G6PD individuals, methylene blue can cause serotonin syndrome in psychiatric patients using SSRIs. This is due to the MAO-A inhibiting property of methylene blue. Interestingly, cimetidine has been found to be useful in dapsone induced methemoglobinemia. It acts by inhibiting the mandatory step “dapsone N hydroxylation’ needed for formation of methoglobin in body.

In summary, we believe that with the help of above discussion, doctors especially ER physicians and internists would be able to diagnose more quickly the cases of methemoglobinemia and treat them promptly.

References