Continuous versus intermittent methylene blue administration: which spin will win?

Sir,

The article by George et al.[1] is indeed interesting. However, a few aspects of their report require contemplation. The use of methylene blue continuous infusion in the management of methemoglobinemia due to insecticide poisoning is not congruent with current evidence. Methylene blue is a cationic thiazine dye and acts as an oxidant. It has assumed a significant role, with diverse applications in clinical practice, but is fraught with risks of side-effects.[2]

Methylene blue is reduced to leukomethylene blue by erythrocyte methemoglobin reductase in the presence of nicotinamide adenine dinucleotide phosphate (NADPH). Further, leukomethylene blue reduces methemoglobin to oxyhemoglobin. Therefore, large doses of methylene blue may result in higher levels of methylene blue rather than the expected leukomethylene blue, which could potentially induce acute hemolytic anemia, independent of preexisting methemoglobinemia.[3] This is strengthened by reports of the paradoxical induction of methemoglobinemia by methylene blue.

The possible mechanisms resulting in rebound methemoglobinemia include continued absorption of the inciting drug as well as prolonged half-life in the setting of renal or hepatic dysfunction.[4] For example, the hydroxylamine metabolites of dapsone responsible for the formation of methemoglobin have a half-life of over 30 h and may linger in circulation for up to 35 days. These agents are metabolized to reactive metabolites that oxidize 75

Authors’ reply

Sir,

We thank Dr. Joob for showing interest in our case.[1] We described a case of thrombotic thrombocytopenic purpura (TTP) after transfusion of ABO incompatible blood in a heart surgery patient. To the best of our knowledge, there is no report of TTP after erroneous blood transfusion. ABO incompatible blood organ transplantation is performed after desensitization of the recipient through plasmapheresis and intravenous immunoglobulin. Thus, ABO incompatibility may not play a direct role in that setting. On the other hand calcineurin inhibitors, well-defined etiologic factors for development of TTP, might have played a role there. We also generated a pathophysiologic hypothesis in our case report. There was no clinically overt cancer but cannot rule out an occult malignancy.

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