LETTER TO THE EDITOR

The potential of methylene blue in treating septic shock: Is it worth a shot?

Salva Shariq[1], Areej Khawaja[2], Nima Khowaja[3]

Madam, Shock is a circulatory failure that results in insufficient oxygen supply to cells. Septic shock is the most common variety in patients admitted to the Intensive Care Unit (ICU) and is a fatal condition that accounts for a considerable number of deaths in the ICU.[1,2] Treatment of septic shock consists of a triad that comprises haemodynamic resuscitation via crystalloid, vasopressor infusion and antibiotic delivery within the first hour of recognition.[2] Despite the evidence that these measures help reduce mortality, the percentage of death remains greater than 40%, necessitating the requirement for alternative treatment strategies.[2] Research shows that methylene blue significantly increases mean arterial pressure (MAP) and systemic vascular resistance (SVR). Furthermore, treatment with methylene blue aids in the tapering of vasopressors.[3] In a recent single-centre randomised control trial including patients suffering from septic shock, Ibarra-Estrada et al. Investigated the effect of early adjuvant methylene blue on time to vasopressor discontinuation. They discovered that in comparison to the control group, patients who were administered methylene blue had decreased time to vasopressor discontinuation with no adverse effect but rather had a shorter length of ICU and hospital stay.[4] Another trial by R. Ismail et al. involving preterm neonates with refractory septic shock reported similar findings where methylene blue led to a significant rise in arterial blood pressure, reducing the need for norepinephrine.[5] In addition, pooled data from a systematic review and meta-analysis shows that the use of methylene blue in conjunction with vasopressors dramatically reduced mortality in patients with vasodilatory shock.

These findings suggest that methylene blue has favourable outcomes in treating septic shock. Due to limited data, more research is required to compare the efficacy of methylene blue in different types of shock states and in different subgroups such as neonates, adolescents, adults and the elderly population. At this stage, more evidence regarding the short-term and long-term benefits and possible side effects of using methylene blue is also required, to allow physicians to be able to incorporate it in regular treatment protocols when practicing evidence-based medicine. Newer studies could help shed some light on appropriate dosing regimens and discover populations that would reap the most benefits from its use. Accurate conclusions, drawn via systematic reviews and meta-analyses including newer large-scale multi-centred clinical trials might be just what is needed to enhance the already existing treatment regimens for shock.

[1]Department of Orthopaedic Surgery, Aga Khan University Hospital, Karachi, Pakistan; [2]Department of ENT, Aga Khan University Hospital, Karachi, Pakistan; [3]Department of Oncology, Jinnah Postgraduate Medical Centre, Karachi, Pakistan.

Correspondence: Salva Shariq. e-mail: salvashariq@gmail.com

ORCID ID. 0000-0001-9684-3421

Submission complete: 16-08-2023 **Review began:** 04-10-2023

Acceptance: 04-10-2023 **Review end:** 04-10-2023

Disclaimer: None.

Conflict of interest: None.

Funding disclosure: None.

DOI: https://doi.org/10.47391/JPMA.10609

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Author Contribution:

SS, Ak and NK: Conception, design, revision.

All authors contribute to the work in the final approval and are accountable for all aspects of the work.