

Off-label Rescue Agents for Vasoplegic Syndrome after Cardiopulmonary Bypass

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Affiliation:

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Grant/Financial Support:

None

KEYWORDS: Methylene blue, Vasoplegia, Cardiopulmonary bypass, Cardiac Surgery, Hydroxocobalamin

Abstract

Cardiovascular disease is the number one cause of death in the United States today¹. Cardiopulmonary bypass (CPB) is a common technique used in the surgical management of cardiovascular disease. A relatively common complication of CPB is vasoplegia, which has an approximate incidence of anywhere from 5-25%¹⁻⁸. Methylene blue is used to treat vasoplegic syndrome (VS) when higher dose vasopressors are ineffective. Vasoplegic syndrome (VS) is defined as a syndrome of low systemic vascular resistance (SVR) in the presence of normal or high cardiac output¹⁻⁴. Generally, VS is characterized as a high cardiac output state ($CI < 2.2 \text{ L/min/m}^2$) with difficulty maintaining a mean arterial pressure (MAP) greater than 60 mmHg despite increasing vasopressor requirements^{1-3,7}. The focus of this case report is to examine methylene blue's effectiveness in treating vasoplegia after weaning from CPB. This case report will also compare and contrast methylene blue and another rescue agent, hydroxocobalamin, and how they combat vasoplegia.