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Introduction:

Hemoadsorption with CytoSorb therapy (CS) could lead to rapid shock reversal in patients with vasoplegic shock. This systematic review summarizes evidence on the impact of CS on vasopressor requirements.

Methods:

A systematic search was conducted (last update: May 8, 2021) and studies reporting norepinephrine (NE) doses before and after CS were selected for a descriptive analysis. Four studies in patients with hyperinflammation-induced vasoplegia that included control cohorts were used for a comparative analysis. Effect size was expressed as reduction in NE dose from baseline to 24 hours.

Results:

36 studies totalling 447 patients reported NE dose before and after CS. Significant NE dose reduction was noted with CS (before CS: 0.55 [0.39-0.86] vs. after CS 0.1 [0.00-0.25] µg/kg/min, p<0.001). In the comparative analysis, a statistically significant benefit after 24 hours of CS was observed (Hedge's g:1.59, 95% CI 0.48- 2.70), however, the I² statistic suggested a high heterogeneity between studies [1-4] (Figure 1).

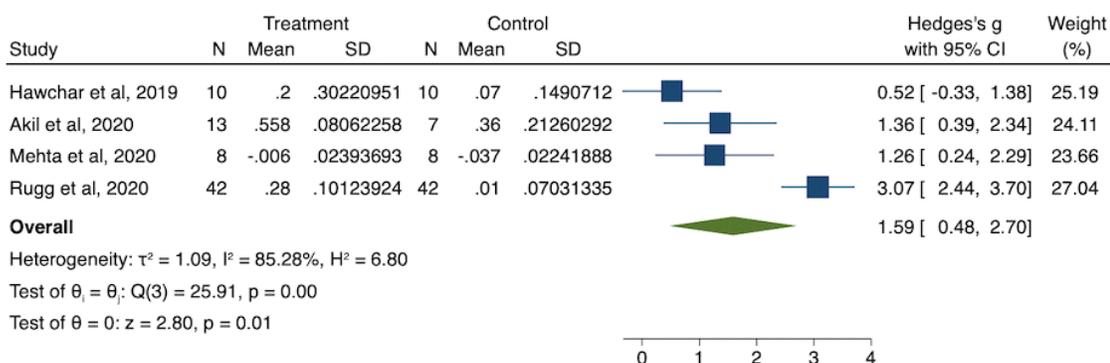
Conclusion:

Despite the limited number of studies, this analysis indicates that CS may reduce NE needs in vasoplegic shock patients. Hemodynamic stability could be a novel endpoint to assess hemoadsorption efficacy in future trials.

References:

1. Hawchar F et al. J Crit Care **49**:172-8, 2019
2. Akil A et al. Thorac Cardiovasc Surg **69**(3):246-51, 2021
3. Mehta Y et al. World J Crit Care Med **9**(1):1-12, 2020
4. Rugg C et al. Biomedicines **8**(12), 2020

Image :



Random-effects REML model

Figure 1. Forest plot for efficacy of CS-therapy to reduce NE requirements at 24 hours