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Permissive hypotensive resuscitation in adult patients with traumatic hemorrhagic shock: A systematic review

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Background & Aim: Permissive hypotensive resuscitation (PHR) is an advancing concept aiming towards deliberative balanced resuscitation while treating severely injured patients and its effectiveness on the survival rate remains unexplored. This detailed systematic review aims to critically evaluate the available literature that investigates the effects of PHR on survival rate.

Methods: A systematic review design searched for comparative and non-comparative studies using EMBASE, MEDLINE, PubMed, Web-of-Science and CENTRAL. Full-text articles on adult trauma patients with low blood pressure were considered for inclusion. The risk of bias and a critical appraisal of the identified articles were performed to assess the quality of the selected studies. Included studies were sorted into comparative and non-comparative studies to ease the process of analysis. Mortality rates of PHR were calculated for both groups of studies.

Results: From the 869 articles that were initially identified, 10 studies were selected for review, including randomized control trials (RCTs) and cohort studies. By applying the risk of bias assessment and critique tools, the methodologies of the selected articles ranged from moderate to high quality. The mortality rates among patients resuscitated with low volume and large volume in the selected RCTs were 21.5% (123/570) and 28.6% (168/587) respectively, while the total mortality rate of the patients enrolled in three non-comparative studies was 9.97% (279/ 2,797).

Conclusions: The death rate among post-trauma patients managed with conservative resuscitation was insignificantly low which indicates that PHR cannot give a worse outcome than the standard aggressive resuscitation in terms of survival rate. Therefore, PHR is a feasible and safely practiced fluid resuscitative strategy to manage hemorrhagic shock in pre-hospital and in-hospital settings. Further trials on PHR are required to assess its effectiveness on the survival rate.

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