



End-Expiratory Occlusion Test to Predict Fluid Responsiveness: a Systematic Review and Meta-analysis - Preliminary Results

Tema: Medicina

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Introduction: Fluid responsiveness, defined as the ability to increase cardiac output following volume administration, should be assessed using dynamic variables to avoid fluid overload. The end-expiratory occlusion test (EEO) is based on heart-lung interactions during mechanical ventilation and has been proposed as a method to predict this response. **Objective:** This study aims to perform a systematic review and meta-analysis of dynamic tests of fluid responsiveness, with particular emphasis on the performance of the EEO test. **Methods:** This study was conducted and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. A comprehensive literature search was conducted in the PubMed and COCHRANE databases. Two authors independently selected articles based on title and abstracts. Disagreements were resolved with a senior author. Prospective studies including adult patients admitted to the intensive care unit that evaluated fluid responsiveness maneuvers against a validated reference standard were included. The quality of the studies was assessed using the QUADAS-2 scale. **Results:** A total of 71 distinct descriptions of fluid responsiveness tests were identified, involving 6,221 patients with a mean age of 62 years. In mechanically ventilated patients, the EEO ranked as the best-performing test, although it exhibited considerable variability and heterogeneity across studies. The EEO test showed sensitivity at 0.83 (95% CI, 0.68–0.92) and specificity at 0.88 (95% CI, 0.77–0.94), with a partial area under the curve of 0.83. **Conclusion:** The EEO test demonstrated the highest diagnostic accuracy in predicting fluid responsiveness in critically ill patients, ranking as the best-performing test in mechanically ventilated patients. These findings suggest that the EEO test should be prioritized as a bedside tool to guide personalized fluid therapy.

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