

Fluid challenge during anesthesia: a systematic review and meta-analysis

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Online Supplement

Research Strategy

The research was performed using Medline and EMBASE databases. The following terms were included:

“fluid challenge” OR “fluid responsiveness” OR “fluid therapy” OR “fluid optimization”

AND

“stroke volume variation” OR “pulse pressure variation” OR “dynamic indices OR indexes”

AND

“intraoperative fluid optimization”, OR “surgery” OR “directed therapy” OR “goal-directed therapy” OR “goal oriented” OR “goal targeted”.

The research was limited by language (English), age of participants (adults) and availability of full text article (if only the abstract of the article has been published it was not included in the review). The database’s filters were used in order to follow the research strategy.

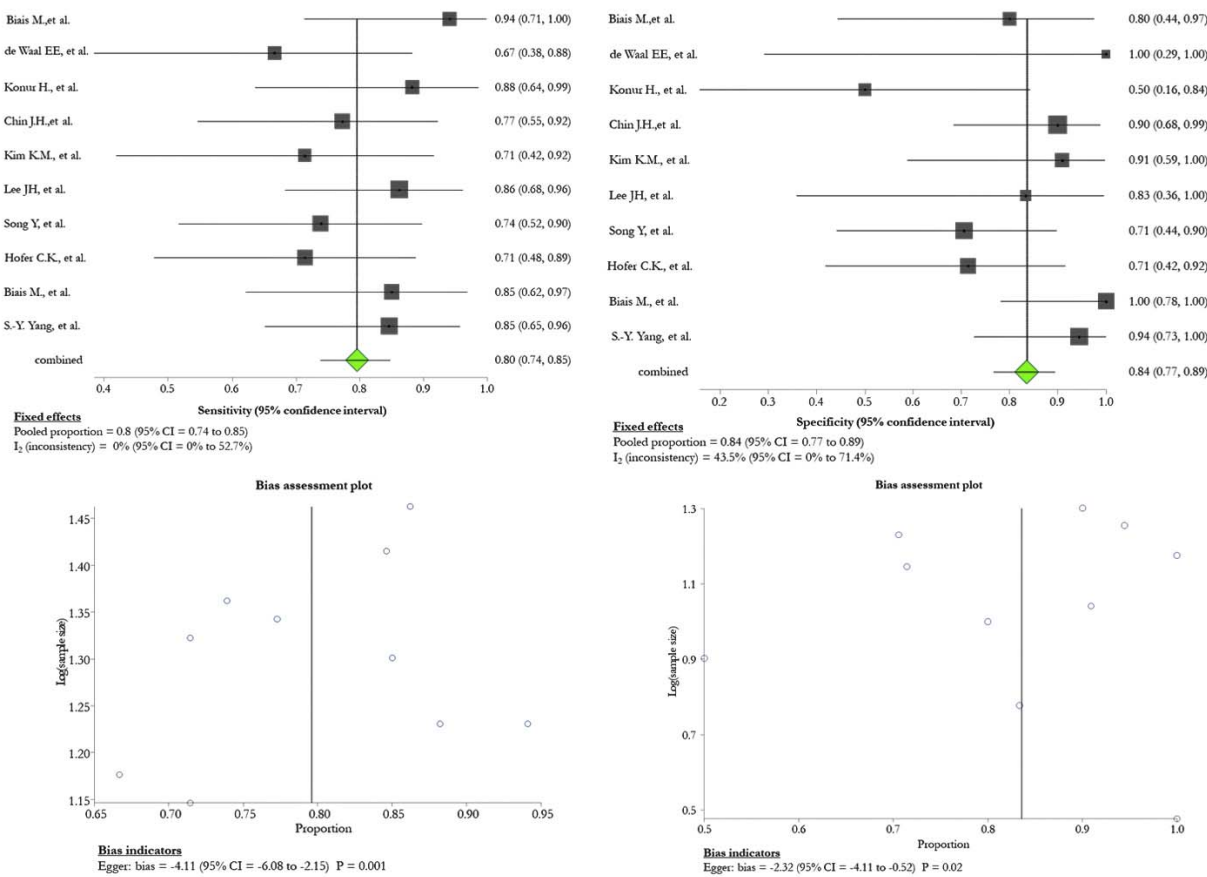
SUPPLEMENTARY TABLES

Supplement Table 1. Comparisons of the characteristics of the population in GDT studies

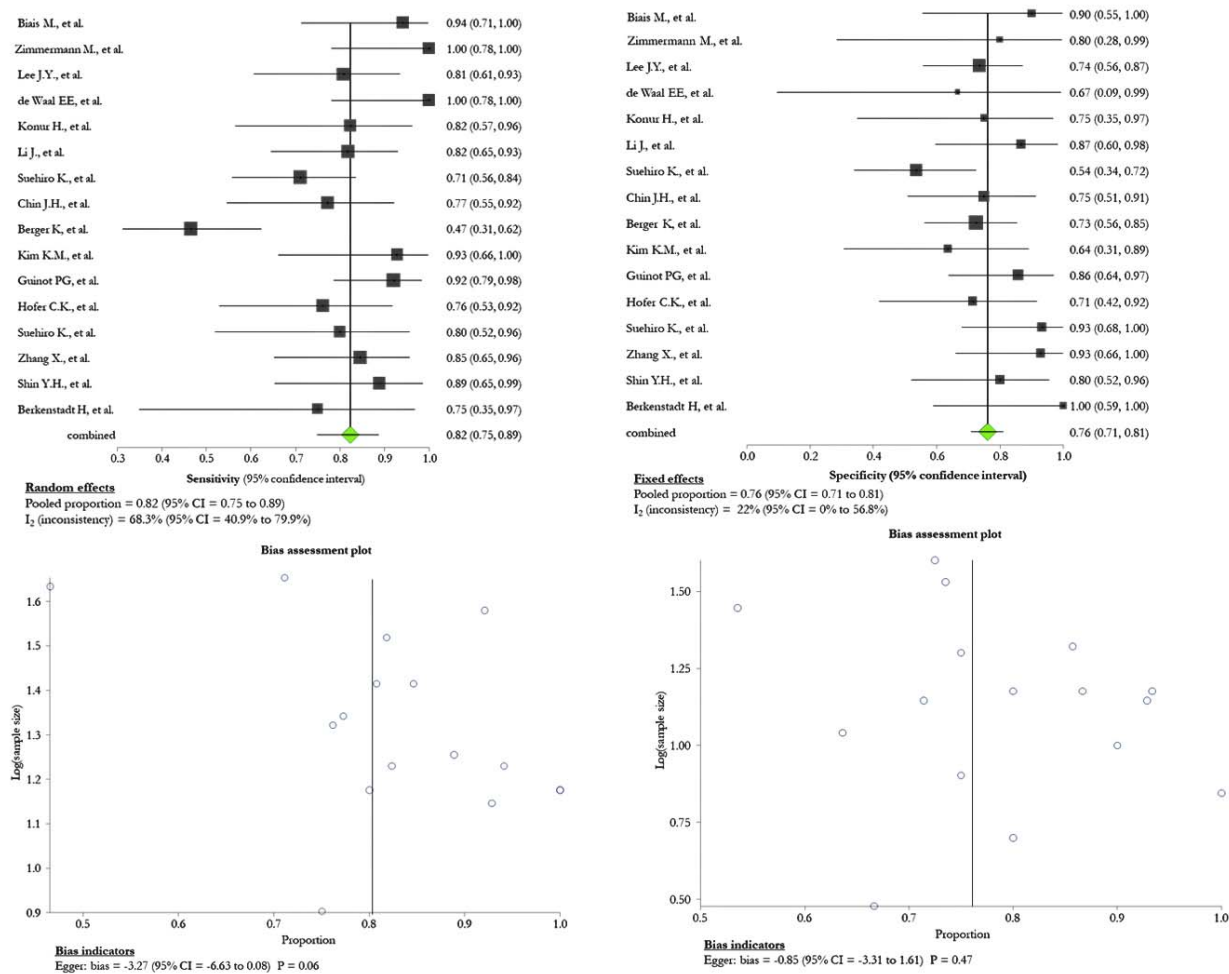
Variables	Treatments	Controls	p-value
Total group, n	1775	1806	
Median (IQR) age, years	66 (60-70)	67 (63-72)	0.51
Median (IQR) ASA I, %	2.1 (0-12.8)	2.7 (0-11.2)	0.99
Mean (SD) ASA II, %	49.8 (29.1)	48.8 (28.9)	0.92
Mean (SD) ASA III, %	44.5 (32.6)	43.5 (32.9)	0.93
Median (IQR) ASA IV, %	0 (0-2.8)	0 (0-2.5)	0.52
Median (IQR) duration of surgery, minutes	167 (147 - 248)	174 (148 -257)	0.84
Median (IQR) total amount of fluid infused, ml	2500 (1056-5.000)	2758 (1385-4494)	0.91
Mean (SD) colloids, ml	1157 (529)	698 (456)	0.001
Median (IQR) crystalloids, ml	1422 (960 - 2489)	2.000 (1129-2888)	0.29
Median (IQR) estimated blood loss, ml	500 (300-980)	500 (350-900)	0.98

Abbreviations: GDT, Goal-Directed Therapy; IQR, interquartile; SD, standard deviation; ASA, American Society of Anaesthesiologists score.

Supplemental Figure 1. Forest and funnel plots of pooled value of sensitivity (left panel) and specificity (right panel) of the 10 studies included in the metanalysis of pulse pressure variation reliability in predicting fluid responsiveness. PPV, pulse pressure variation.



Supplemental Figure 2. Forest and funnel plots of pooled value of sensitivity (left panel) and specificity (right panel) of the 16 studies included in the metanalysis of stroke volume variation reliability in predicting fluid responsiveness. SVV, stroke volume variation.



Supplemental Figure 3. **Estimated ROC curves with upper and lower limits of the 95% confidence intervals** of baseline pulse pressure variation [left panel, 10 studies, AUC = 0.86 (95%CI, 0.80-0.92)] and stroke volume variation [right panel, 16 studies, AUC = 0.87 (95%CI, 0.81-0.93)] reporting the ability to discriminate between responders and non-responders after FC administration (software MetaDiSC®, version 1.4, see text for more data details). PPV, pulse pressure variation; SVV, stroke volume variation; AUC, area under the curve.

