

Appendix 1. PRISMA-NMA Checklist.

Section/Topic	№ #	Checklist item	Reported on page#
TITLE			
Title	1	Indicate that the report is a systematic review with a network meta-analysis (or an equivalent form of meta-analysis)	Title page
ABSTRACT			
Structured summary	2	Provide a structured summary including, where appropriate, the following: Introduction: main objectives. Methods: data sources; inclusion criteria for studies, participants, and interventions; quality assessment; synthesis methods, e.g., network meta-analysis. Results: number of identified studies and participants; summary estimates with confidence/credible intervals; ranking of interventions may be discussed. For brevity, pairwise comparisons with a chosen treatment may be summarized. Discussion/Conclusions: limitations; conclusions and implications of the results. Other: main funding source; systematic review registration number and registry	Abstract
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing evidence, including the reasons for conducting a network meta-analysis specifically	Introduction
Objectives	4	Provide a clear research question stating the participants, interventions, comparisons, outcomes, and study designs (PICOS)	Introduction
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists and where it can be accessed (e.g., web address); if available, provide registration information, including the registration number	Abstract, Methods
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, follow-up duration) and report characteristics (e.g., years considered, language, publication status) used as eligibility criteria, with justification. Clearly describe the eligible interventions included in the treatment network and note whether any were combined or collapsed into a single node (with justification)	Eligibility criteria and study selection
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) and the date of the last search	Search strategy

Search	8	Present the full electronic search strategy for at least one database, including all limits, so that it can be reproduced.	Search strategy
Study selection	9	Present the full electronic search strategy for at least one database, including all limits, so that it can be reproduced.	Eligibility criteria and study selection
Data collection process	10	Describe the study selection process (i.e., screening, eligibility checking, inclusion in the systematic review, and, if applicable, in the meta-analysis).	Data extraction and outcome assessment
Data variables	11	List and define all variables for which data were collected (e.g., PICOS, funding sources), as well as any assumptions and simplifications made.	Data extraction and outcome assessment
Network geometry	S1	Describe the methods used to examine the geometry of the treatment network and the potential biases associated with it. Indicate how the evidence base was graphically presented, which characteristics were collected and used to describe it.	Fig. 2
Risk of bias within individual studies	12	Describe the methods for assessing the risk of bias in individual studies (specify whether this was done at the study or outcome level), and how this information was used in the data synthesis.	Internal validity and risk of bias assessment.
Summary measures	13	Specify the principal summary measures (e.g., risk ratio, mean difference). Also describe the use of additional metrics such as ranking of interventions and SUCRA (Surface Under the Cumulative Ranking curve), as well as modified approaches to presenting summary meta-analysis results.	Data extraction and outcome assessment
Planned methods of analysis	14	Describe the methods for handling data and combining the results of studies for each network meta-analysis. This should include, but not be limited to, the following aspects: • handling of multi-arm studies; • choice of variance structure; • choice of prior distributions in Bayesian analyses; • assessment of model fit (goodness-of-fit).	Data analysis.
Assessment of inconsistency	S2	Describe the statistical methods used to assess the consistency of direct and indirect evidence in the treatment network(s) studied. Indicate the measures taken to address any identified inconsistency.	Data analysis.

Risk of bias across studies	15	Specify any assessments of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	Internal validity and risk of bias assessment.
Additional analyses	16	Describe the methods for additional analyses, if performed, indicating which were pre-specified. This may include, but not be limited to, the following: • sensitivity or subgroup analyses; • meta-regression analyses; • alternative formulations of the intervention network; • use of alternative prior distributions for Bayesian analyses (if applicable).	Internal validity and risk of bias assessment.
Results†			
Study selection	17	State the number of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage; ideally provide a flow diagram	Study characteristics, Figure 1
Presentation of network structure	S3	Provide a network graph of the included studies to visualize its geometry.	Appendices, Figure 2
Summary of network geometry	S4	Provide a brief overview of the characteristics of the network of interventions. This may include comments on the number of trials and randomized patients for the various interventions and pairwise comparisons in the network, gaps in the evidence base, and possible biases reflected in the network structure	Appendices, Figure 2
Study characteristics	18	For each study, present the characteristics for which data were collected (e.g., sample size, PICOS, follow-up period), and provide references.	Study characteristics, Figure 1
Risk of bias within studies	19	Present data on the risk of bias for each study and, if available, at the outcome level	Appendix, risk of bias assessment and GRADE
Results of individual studies	20	For all outcomes considered (benefits or harms), present for each study: 1) simple summary data for each intervention group and 2) effect estimates with confidence intervals. For large networks, modified approaches may be required.	Appendices, fig. 3
Synthesis of results	21	Present the results of each meta-analysis performed, including confidence/credible intervals. In large networks, the focus may be on comparisons with a specific comparator (e.g., placebo or standard care), with full results provided in an appendix. League tables and	Network meta-analysis, Appendices

		forest plots may be used for clarity. If additional metrics were applied (e.g., ranking of interventions), these should also be presented	
Investigation of inconsistency	S5	Describe the results of inconsistency investigations. This may include information such as model fit statistics for comparing consistency and inconsistency models, p-values of statistical tests, or summary estimates of inconsistency from different parts of the network	Appendices
Risk of bias across studies	22	Present the results of any assessment of the risk of bias across the body of evidence for the research question	Risk of bias assessment and GRADE
Results of additional analyses	23	Provide the results of additional analyses, if performed (e.g., sensitivity or subgroup analyses, meta-regressions, alternative network geometries, alternative choice of prior distributions in Bayesian analyses, etc.)	Sensitivity analysis
ОБСУЖДЕНИЕ			
Summary of evidence	24	Summarize the main results, including the strength of evidence for each key outcome; assess their significance for target groups (e.g., healthcare professionals, users, and decision-makers).	Key results.
Limitations.	25	Discuss the limitations at the study and outcome level (e.g., risk of bias), as well as at the review level (e.g., incomplete identification of studies, reporting bias). Comment on the validity of assumptions such as transitivity and consistency. Note any potential issues related to network geometry (e.g., avoidance of certain comparisons).	Strengths and limitations.
Conclusions	26	Provide an overall interpretation of the results in the context of other evidence, and specify the implications for future research	Conclusions
ФИНАНСИРОВАНИЕ			
Funding.	27	Describe the sources of funding for the systematic review and other forms of support (e.g., provision of data); the role of the funders in conducting the review. Also indicate whether funding was received from manufacturers of the interventions included in the network, and/or whether any of the authors are experts with professional conflicts of interest that could have influenced the use of the studied interventions.	Funding.

Note. PICOS = population, intervention, comparators, outcomes, study design. Text in italics indicates wording specific to the reporting of network meta-analyses, which was added to clarify the PRISMA statement. Authors may find it useful to plan in advance the use of supplementary materials for the complete reporting of all relevant information for the items in this section.

Appendix 2. Search strategy for each database.

PubMed, MEDLINE: (“fluid responsiveness” OR “fluid resuscitation” OR “volume responsiveness” OR “fluid status” OR “volume status” OR “volemic status”) AND (‘intensive care’ OR ‘critical care’) AND (caval OR “inferior vena cava” OR IVC OR “passive leg raising” OR PLR OR “fluid challenge” OR “fluid bolus” OR “central venous pressure” OR CVP OR “central venous” OR “pulse pressure variation” OR “stroke volume variation”) AND (AUC OR AUROC OR ROC).

Cochrane CENTRAL:

("fluid responsiveness" OR "fluid resuscitation" OR "volume responsiveness" OR "fluid status" OR "volume status" OR "volemic status") AND ("intensive care" OR "critical care") AND (caval OR "inferior vena cava" OR IVC OR "passive leg raising" OR PLR OR "fluid challenge" OR "fluid bolus" OR "central venous pressure" OR CVP OR "central venous" OR "pulse pressure variation" OR "stroke volume variation") AND (AUC OR AUROC OR ROC).

Additional sources (snowballing method): Litmaps web application (<https://www.litmaps.com/>). Three approaches: 1) most frequently co-cited and co-referenced items; 2) common co-authorship patterns; 3) similarity of abstract and title content (AI-based semantic analysis).

Table S1. PICOS criteria.

PICOS	
Population	Adult patients
Index test (test method)	Bilateral passive leg raising (PLR) test
Comparator (‘gold standard’ method)	Fluid challenge (FC) test for assessing fluid responsiveness
Outcomes	Responders, non-responders, sensitivity, specificity, area under the receiver operating characteristic curve (AUROC)
Study design	Prospective cohort studies

Period: from the start of observation until March 18, 2024.

Appendix 3. Risk of bias

QUADAS-2 tool

We used an averaging method to assess the overall risk of bias.

If bias was present in one of the domains, the overall risk was considered moderate; if bias was present in two or more domains, the overall risk was considered high.

Domain 1: Patient selection

Risk of bias: could the selection of patients have introduced bias?

- Was a consecutive or random sample of patients enrolled?
- Was a case–control design avoided?
- Did the study avoid inappropriate exclusions?
- Were the clear objective and description of inclusion criteria for the study population provided?
- Is the study population described in detail?

Applicability: are there concerns that the included patients and setting do not match the research question?

Domain 2: Index test

Risk of bias: could the conduct or interpretation of the index test have introduced bias?

- Were the index test results interpreted without knowledge of the reference standard results?

Applicability: are there concerns that the index test, its conduct, or its interpretation differ from the research question?

Domain 3: Reference standard

Risk of bias: could the reference standard, its conduct, or its interpretation have introduced bias?

- Is it likely that the reference standard correctly classified the target condition?

Applicability: are there concerns that the target condition as defined by the reference standard does not match the research question?

Domain 4: Flow and timing

Risk of bias: could the patient flow have introduced bias?

- Was the interval between the index test and the reference standard appropriate?
- Did all patients receive the same reference standard?
- Were all patients included in the analysis?

Appendix 4. Additional results

Table P2. Excluded studies with reason for exclusion.

Reason for exclusion	Study
Absence of relevant data for the network meta-analysis (NMA).	1. Lakhal K., Ehrmann S., Benzekri-Lefèvre D., Runge I., Legras A., Dequin P.F., Mercier E., Wolff M., Régnier B., Boulain T. Brachial cuff measurements of blood pressure during passive leg raising for fluid responsiveness prediction. <i>Ann Fr Anesth Reanim.</i> 2012;31(5):e67-72. PMID: 22464162. https://doi.org/10.1016/j.annfar.2012.01.032 2. Hou J.Y., Zheng J.L., Ma G.G., Lin X.M., Hao G.W., Su Y., Luo J.C., Liu K., Luo Z., Tu G.W. Evaluation of radial artery pulse pressure effects on detection of stroke volume changes after volume loading maneuvers in cardiac surgical patients. <i>Ann Transl Med.</i> 2020;8(12):787. PMID: 32647712; PMCID: PMC7333092. https://doi.org/10.21037/atm-20-847 3. Maizel J., Airapetian N., Lorne E., Tribouilloy C., Massy Z., Slama M. Diagnosis of central hypovolemia by using passive leg raising. <i>Intensive Care Med.</i> 2007;33(7):1133-1138. PMID: 17508202. https://doi.org/10.1007/s00134-007-0642-y 4. El Hadouti Y., Valencia L., Becerra A., Rodríguez-Pérez A., Vincent J.L. Echocardiography and passive leg raising in the postoperative period: A prospective observational study. <i>Eur J Anaesthesiol.</i> 2017;34(11):748-754. PMID: 28719516. https://doi.org/10.1097/EJA.0000000000000679 5. Airapetian N., Maizel J., Alyamani O., Mahjoub Y., Lorne E., Levrard M., Ammenouche N., Seydi A., Tinturier F., Lobjoie E., Dupont H., Slama M. Does inferior vena cava respiratory variability predict fluid responsiveness in spontaneously breathing patients? <i>Crit Care.</i> 2015;19:400. PMID: 26563768; PMCID: PMC4643539. https://doi.org/10.1186/s13054-015-1100-9 6. Corl K.A., George N.R., Romanoff J., Levinson A.T., Chheng D.B., Merchant R.C., Levy M.M., Napoli A.M. Inferior vena cava collapsibility detects fluid responsiveness among spontaneously breathing critically-ill patients. <i>J Crit Care.</i> 2017;41:130-137. PMID: 28525778. https://doi.org/10.1016/j.jcrc.2017.05.008 7. Cheong I., Otero Castro V., Sosa F.A., Tort Oribe B., Früchtenicht M.F., Tamagnone F.M., Merlo P.M. Passive leg raising test using the carotid flow velocity-time integral to predict fluid responsiveness. <i>J Ultrasound.</i> 2024;27(1):97-104. PMID: 37668901; PMCID: PMC10909041. https://doi.org/10.1007/s40477-023-00824-1 8. Sobczyk D., Nycz K., Andruszkiewicz P., Wierzbicki K., Stapor M. Ultrasonographic caval indices do not significantly contribute to predicting fluid responsiveness immediately after coronary artery bypass grafting when compared to passive leg raising. <i>Cardiovasc Ultrasound.</i> 2016;14(1):23. PMID: 27267175; PMCID: PMC4897915. https://doi.org/10.1186/s12947-016-0065-4 9. Mallat J., Fischer M.O., Granier M., Vinsonneau C., Jonard M., Mahjoub Y., Baghdadi F.A., Préau S., Poher F., Rebet O., Bouhemad B., Lemyze M., Marzouk M., Besnier E., Hamed F., Rahman N., Abou-Arab O., Guinot P.G. Passive leg raising-induced changes in pulse pressure variation to assess fluid responsiveness in mechanically ventilated patients: a multicentre prospective observational study. <i>Br J Anaesth.</i> 2022;129(3):308-316. PMID: 35842352. https://doi.org/10.1016/j.bja.2022.04.031 10. Cheong I., Otero Castro V., Brizuela M., Früchtenicht M.F., Merlo P.M., Tamagnone F.M. Passive leg raising test to predict fluid responsiveness using the right ventricle outflow tract velocity-time integral through a subcostal view. <i>J Ultrasound.</i> 2025;28(1):19-25. PMID: 36127570; PMCID: PMC11947389. https://doi.org/10.1007/s40477-022-00719-7 11. Hofer C.K., Geisen M., Hartnack S., Dzembali O., Ganter M.T., Zollinger A. Reliability of Passive Leg Raising, Stroke Volume Variation and Pulse Pressure Variation to Predict Fluid Responsiveness During Weaning From Mechanical Ventilation After Cardiac Surgery: A Prospective, Observational Study. <i>Turk J Anaesthesiol Reanim.</i> 2018;46(2):108-115. PMID: 29744245; PMCID: PMC5937456. https://doi.org/10.5152/TJAR.2018.29577 12. Beurton A., Teboul J.L., Gavelli F., Gonzalez F.A., Giroto V., Galarza L., Anguel N., Richard C., Monnet X. The effects of passive leg raising may be detected by the

	plethysmographic oxygen saturation signal in critically ill patients. <i>Crit Care</i>. 2019;23(1):19. PMID: 30658663; PMCID: PMC6339274. https://doi.org/10.1186/s13054-019-2306-z 13. Fellahi J.L., Fischer M.O., Dalbera A., Massetti M., Gérard J.L., Hanouz J.L. Can endotracheal bioimpedance cardiography assess hemodynamic response to passive leg raising following cardiac surgery? <i>Ann Intensive Care</i>. 2012;2(1):26. PMID: 22784815; PMCID: PMC3425133. https://doi.org/10.1186/2110-5820-2-26 14. Ibarra-Estrada M.Á., López-Pulgarín J.A., Mijangos-Méndez J.C., Díaz-Gómez J.L., Aguirre-Avalos G. Respiratory variation in carotid peak systolic velocity predicts volume responsiveness in mechanically ventilated patients with septic shock: a prospective cohort study. <i>Crit Ultrasound J</i>. 2015;7(1):29. PMID: 26123610; PMCID: PMC4485670. https://doi.org/10.1186/s13089-015-0029-1 15. Ma G.G., Hao G.W., Yang X.M., Zhu D.M., Liu L., Liu H., Tu G.W., Luo Z. Internal jugular vein variability predicts fluid responsiveness in cardiac surgical patients with mechanical ventilation. <i>Ann Intensive Care</i>. 2018;8(1):6. PMID: 29340792; PMCID: PMC5770347. https://doi.org/10.1186/s13613-017-0347-5 16. Xue Y.M., Zeng L.J., Chen D.W., Lai B.C., Xu B.F., He J.Y., Wu W., Lin F.H. Cephalic artery peak velocity variation during passive leg raising can predict fluid responsiveness in mechanically ventilated severe sepsis patients with spontaneous breathing. <i>Zhonghua Yi Xue Za Zhi</i>. 2018;98(31):2476-2480. Chinese. PMID: 30138998. https://doi.org/10.3760/cma.j.issn.0376-2491.2018.31.005 17. Fischer M.O., Rebet O., Guinot P.G., Lemétayer C., Saplaçan V., Gérard J.L., Fellahi J.L., Hanouz J.L., Lorne E.; French Hemodynamic Team. Assessment of changes in cardiac index with calibrated pulse contour analysis in cardiac surgery: A prospective observational study. <i>Anaesth Crit Care Pain Med</i>. 2016;35(4):261-7. PMID: 27083307. https://doi.org/10.1016/j.accpm.2015.12.010 18. Zhu G., Zhang K., Fu Y., Hu Z. Accuracy assessment of noninvasive cardiac output monitoring in the hemodynamic monitoring in critically ill patients. <i>Ann Palliat Med</i>. 2020;9(5):3506-3512. PMID: 33065801. https://doi.org/10.21037/apm-20-1731 19. Miller J., Ho C.X., Tang J., Thompson R., Goldberg J., Amer A., Nahab B. Assessing Fluid Responsiveness in Spontaneously Breathing Patients. <i>Acad Emerg Med</i>. 2016;23(2):186-90. PMID: 26764894. https://doi.org/10.1111/acem.12864 20. Elwan M.H., Roshdy A., Elsharkawy E.M., Eltahan S.M., Coats T.J. Can passive leg raise predict the response to fluid resuscitation in ED? <i>BMC Emerg Med</i>. 2022;22(1):172. PMID: 36289475; PMCID: PMC9608892. https://doi.org/10.1186/s12873-022-00721-6 21. Jabot J., Teboul J.L., Richard C., Monnet X. Passive leg raising for predicting fluid responsiveness: importance of the postural change. <i>Intensive Care Med</i>. 2009;35(1):85-90. PMID: 18795254. https://doi.org/10.1007/s00134-008-1293-3 22. Mahjoub Y., Touzeau J., Airapetian N., Lorne E., Hijazi M., Zogheib E., Tinturier F., Slama M., Dupont H. The passive leg-raising maneuver cannot accurately predict fluid responsiveness in patients with intra-abdominal hypertension. <i>Crit Care Med</i>. 2010;38(9):1824-9. PMID: 20639753. https://doi.org/10.1097/CCM.0b013e3181eb3c21 23. Trifi A., Abdellatif S., Daly F., Nasri R., Touil Y., Ben Lakhal S. Ultrasound stroke volume variation induced by passive leg raising and fluid responsiveness: An observational cohort study. <i>Med Intensiva (Engl Ed)</i>. 2019;43(1):10-17. English, Spanish. PMID: 29258779. https://doi.org/10.1016/j.medin.2017.11.002 24. Kupersztich-Hagege E., Teboul J.L., Artigas A., Talbot A., Sabatier C., Richard C., Monnet X. Bioreactance is not reliable for estimating cardiac output and the effects of passive leg raising in critically ill patients. <i>Br J Anaesth</i>. 2013;111(6):961-6. PMID: 23985531. https://doi.org/10.1093/bja/aet282 25. Lafanechère A., Pène F., Goulenok C., Delahaye A., Mallet V., Choukroun G., Chiche J.D., Mira J.P., Cariou A. Changes in aortic blood flow induced by passive leg raising predict fluid responsiveness in critically ill patients. <i>Crit Care</i>. 2006;10(5):R132. PMID: 16970817; PMCID: PMC1751046. https://doi.org/10.1186/cc5044 26. Biais M., Vidil L., Sarabay P., Cottenceau V., Revel P., Sztark F. Changes in stroke volume induced by passive leg raising in spontaneously breathing patients: comparison between echocardiography and Vigileo/FloTrac device. <i>Crit Care</i>. 2009;13(6):R195. PMID: 19968880; PMCID: PMC2811910. https://doi.org/10.1186/cc8195
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	27. Lamia B., Ochagavia A., Monnet X., Chemla D., Richard C., Teboul J.L. Echocardiographic prediction of volume responsiveness in critically ill patients with spontaneously breathing activity. <i>Intensive Care Med.</i> 2007;33(7):1125-1132. PMID: 17508199. https://doi.org/10.1007/s00134-007-0646-7 28. Benomar B., Ouattara A., Estagnasie P., Brusset A., Squara P. Fluid responsiveness predicted by noninvasive bioimpedance-based passive leg raise test. <i>Intensive Care Med.</i> 2010;36(11):1875-81. PMID: 20665001. https://doi.org/10.1007/s00134-010-1990-6 29. Thiel S.W., Kollef M.H., Isakow W. Non-invasive stroke volume measurement and passive leg raising predict volume responsiveness in medical ICU patients: an observational cohort study. <i>Crit Care.</i> 2009;13(4):R111. PMID: 19586543; PMCID: PMC2750155. https://doi.org/10.1186/cc7955 30. Monnet X., Jabot J., Maizel J., Richard C., Teboul J.L. Norepinephrine increases cardiac preload and reduces preload dependency assessed by passive leg raising in septic shock patients. <i>Crit Care Med.</i> 2011;39(4):689-94. PMID: 21263328. https://doi.org/10.1097/CCM.0b013e318206d2a3 31. Monnet X., Bleibtreu A., Ferré A., Dres M., Gharbi R., Richard C., Teboul J.L. Passive leg-raising and end-expiratory occlusion tests perform better than pulse pressure variation in patients with low respiratory system compliance. <i>Crit Care Med.</i> 2012;40(1):152-7. PMID: 21926581. https://doi.org/10.1097/CCM.0b013e31822f08d7 32. Monnet X., Dres M., Ferré A., Le Teuff G., Jozwiak M., Bleibtreu A., Le Deley M.C., Chemla D., Richard C., Teboul J.L. Prediction of fluid responsiveness by a continuous non-invasive assessment of arterial pressure in critically ill patients: comparison with four other dynamic indices. <i>Br J Anaesth.</i> 2012;109(3):330-8. PMID: 22735299. https://doi.org/10.1093/bja/aes182 33. Duus N., Shogilev D.J., Skibsted S., Zijlstra H.W., Fish E., Oren-Grinberg A., Lior Y., Novack V., Talmor D., Kirkegaard H., Shapiro N.I. The reliability and validity of passive leg raise and fluid bolus to assess fluid responsiveness in spontaneously breathing emergency department patients. <i>J Crit Care.</i> 2015;30(1):217.e1-5. PMID: 25262530. https://doi.org/10.1016/j.jcrc.2014.07.031 34. Sobczyk D., Nycz K., Andruszkiewicz P., Wierzbicki K., Stapor M. Ultrasonographic caval indices do not significantly contribute to predicting fluid responsiveness immediately after coronary artery bypass grafting when compared to passive leg raising. <i>Cardiovasc Ultrasound.</i> 2016;14(1):23. PMID: 27267175; PMCID: PMC4897915. https://doi.org/10.1186/s12947-016-0065-4 35. Kim N., Shim J.K., Choi H.G., Kim M.K., Kim J.Y., Kwak Y.L. Comparison of positive end-expiratory pressure-induced increase in central venous pressure and passive leg raising to predict fluid responsiveness in patients with atrial fibrillation. <i>Br J Anaesth.</i> 2016;116(3):350-6. PMID: 26577035. https://doi.org/10.1093/bja/aev359 36. Beurton A., Teboul J.L., Girotto V., Galarza L., Anguel N., Richard C., Monnet X. Intra-Abdominal Hypertension Is Responsible for False Negatives to the Passive Leg Raising Test. <i>Crit Care Med.</i> 2019;47(8):e639-e647. PMID: 31306258. https://doi.org/10.1097/CCM.0000000000003808 37. Bataille B., de Selle J., Moussot P.E., Marty P., Silva S., Cocquet P. Machine learning methods to improve bedside fluid responsiveness prediction in severe sepsis or septic shock: an observational study. <i>Br J Anaesth.</i> 2021;126(4):826-834. PMID: 33461735. https://doi.org/10.1016/j.bja.2020.11.039
Use of VV-ECMO	1. Guinot P.G., Zogheib E., Detave M., Moubarak M., Hubert V., Badoux L., Bernard E., Besserve P., Caus T., Dupont H. Passive leg raising can predict fluid responsiveness in patients placed on venovenous extracorporeal membrane oxygenation. <i>Crit Care.</i> 2011;15(5):R216. PMID: 21923944; PMCID: PMC3334760. https://doi.org/10.1186/cc10451

Table. P3. Additional characteristics and outcomes.

Author	Test parameter	Test parameter group	Test parameter threshold (cut-off)	Additional characteristics of the reference standard	Reference standard parameter	Reference standard threshold	Baseline PLR angle	PLR assessment time, min	Mean age, years	Males, %	APACHE II, points	CO, l/min	CI, L/min/m ²	SV, ml	AUROC средн	AUROC SD	SE	SP	Responders	Non-responders
Taccheri T. (2021)	Inferior vena cava respiratory index (absolute changes).	Inferior vena cava respiratory index (absolute changes).	ND	500 ml	ΔCH (%)	0,10	45	1,0	66,0	76,7	ND	ND	R: 3,0±0,9; NR: 3,0±1,1	ND	0,56	0,11	ND	ND	15	15
Taccheri T. (2021)	ΔSVV (%)	ΔSVV (%)	−19,0	500 ml	ΔCH (%)	0,10	45	1,0	66,0	76,7	ND	ND	R: 3,0±0,9; NR: 3,0±1,1	ND	0,90	0,07	80,0	100,0	15	15
Taccheri T. (2021)	Δ Inferior vena cava respiratory index (%)	Δ Inferior vena cava respiratory index (%)	−24,0	500 ml	ΔCH (%)	0,10	45	1,0	66,0	76,7	ND	ND	R: 3,0±0,9; NR: 3,0±1,1	ND	0,76	0,10	73,0	87,0	15	15
Taccheri T. (2021)	ΔPPV (%)	ΔPPV (%)	−20,0	500 ml	ΔCH (%)	0,10	45	1,0	66,0	76,7	ND	ND	R: 3,0±0,9; NR: 3,0±1,1	ND	0,98	0,02	100,0	93,0	15	15
Zhao Z. (2022)	ΔPPV (%)	ΔPPV (%)	ND	500 ml	ΔCH (%)	0,15	45	1,0	59,0	70,0	7,0±3,0	ND	R: 3,3±0,7; NR: 3,3±0,7	ND	0,54	0,35	64,0	59,0	22	18
Zhao Z. (2022)	ΔSVV (%)	ΔSVV (%)	ND	500 ml	ΔCH (%)	0,15	45	1,0	59,0	70,0	7,0±3,0	ND	R: 3,3±0,7; NR: 3,3±0,7	ND	0,57	0,54	64,0	55,0	22	18
Zhao Z. (2022)	ΔCH (%)	Cardiac output	9,8	500 ml	ΔCH (%)	0,15	45	1,0	59,0	70,0	7,0±3,0	ND	R: 3,3±0,7; NR: 3,3±0,7	ND	0,92	0,27	95,0	77,8	22	18
Zhao Z. (2022)	ΔIYO (%)	Cardiac output	11,0	500 ml	ΔCH (%)	0,15	45	1,0	59,0	70,0	7,0±3,0	ND	R: 3,3±0,7; NR: 3,3±0,7	ND	0,89	0,19	86,0	77,8	22	18
Wu J. (2018)	Δ SV (%)	Cardiac output	12,5	250 ml	ΔYO (%)	0,15	45	4,0	61,0	61,3	19,3±2,9	ND	ND	R: 55,9±5,2; NR: 57,6±4,4	0,92	0,33	89,3	88,2	28	34
Wu J. (2018)	ΔVpeak (%)	Arterial blood flow	10,6	250 ml	ΔYO (%)	0,15	45	1,0	61,0	61,3	19,3±2,9	ND	ND	R: 55,9±5,2; NR: 57,6±4,4	0,90	0,28	82,1	88,2	28	34
Lakhal K. (2010)	ΔCB (%)	Cardiac output	7,0	500 ml	ΔCB (%)	0,10	45	1,0	59,0	70,6	ND	6,0 ± 2,3	3,4 ± 1,4	ND	0,89	0,33	ND	ND	43	59
Lakhal K. (2010)	ΔПД (%)	Pressure	9,0	500 ml	ΔCB (%)	0,10	45	1,0	59,0	70,6	ND	6,0 ± 2,3	3,4 ± 1,4	ND	0,76	0,43	ND	ND	43	59
Monnet X. (2013)	ΔПД (%)	Pressure	ND	500 ml	ΔCH (%)	0,15	45	1,0	ND	ND	ND	ND	ND	ND	0,65	0,48	ND	ND	21	19
Monnet X. (2013)	ΔСИ (%)	Cardiac output	10,0	500 ml	ΔCH (%)	0,15	45	1,0	ND	ND	ND	ND	ND	ND	0,98	0,19	95,0	95,0	21	19
Monnet X. (2013)	ΔEtCO ₂ (%)	ΔEtCO ₂ (%)	5,0	500 ml	ΔCH (%)	0,15	45	1,0	ND	ND	ND	ND	ND	ND	0,93	0,28	71,0	100,0	21	19
Monge Garcia M.I. (2012)	ΔCB (%)	Cardiac output	12,0	500 ml	ΔCB (%)	0,15	45	2,0	64,0	43,2	18,8±7,3	R: 5,4±2,3; NR: 6,5±2,5	ND	R: 53,5±26,3; NR: 76,4±31,3	0,97	0,03	95,2	93,7	21	16
Monge Garcia M.I. (2012)	ΔEtCO ₂ (%)	ΔEtCO ₂ (%)	5,0	500 ml	ΔCB (%)	0,15	45	2,0	64,0	43,2	18,8±7,3	R: 5,4±2,3; NR: 6,5±2,5	ND	R: 53,5±26,3; NR: 76,4±31,3	0,94	0,03	90,5	93,7	21	16
Monge Garcia M.I. (2012)	ΔПД (%)	Pressure	11,0	500 ml	ΔCB (%)	0,15	45	2,0	64,0	43,2	18,8±7,3	R: 5,4±2,3; NR: 6,5±2,5	ND	R: 53,5±26,3; NR: 76,4±31,3	0,73	0,09	66,7	81,2	21	16
Ma G. (2020)	Δ SV (%)	Cardiac output	13,0	500 ml	ΔYO (%)	0,15	45	1,5	62,0	76,4	R: 9,0±5,0; NR: 10,0±6,0	R: 2,9±1,2; NR: 3,4±1,3	ND	R: 39,9±12,1; NR: 50,7±18,3	0,93	0,28	87,3	86,7	63	60
Ma G. (2020)	ΔSVV (%)	ΔSVV (%)	−4,0	500 ml	ΔYO (%)	0,15	45	1,5	62,0	76,4	R: 9,0±5,0; NR: 10,0±6,0	R: 2,9±1,2; NR: 3,4±1,3	ND	R: 39,9±12,1; NR: 50,7±18,3	0,90	0,34	85,7	91,7	63	60
Krige A. (2016)	ΔSVV (%)	ΔSVV (%)	ND	250 ml	ΔCB (%)	0,15	45	2,0	60,0	45,0	19,9±6,9	6,1±1,5	3,3±0,8	60,8±14,5	0,56	0,61	ND	ND	10	23
Krige A. (2016)	ΔCB (%)	Cardiac output	9,0	250 ml	ΔCB (%)	0,15	45	2,0	60,0	45,0	19,9±6,9	6,1±1,5	3,3±0,8	60,8±14,5	0,85	0,52	80,0	91,0	10	23
Préau S. (2010)	Δ SV (%)	Cardiac output	10,0	500 ml	ΔYO (%)	0,15	30–45	5,0	53,0	55,9	ND	ND	R: 2,3±1,1; NR: 2,7±0,8	R: 39,0±15,0; NR: 52,0±10,0	0,94	0,04	86,0	90,0	14	20
Préau S. (2010)	ΔVF (%)	Arterial blood flow	8,0	500 ml	ΔYO (%)	0,15	30–45	5,0	53,0	55,9	ND	ND	R: 2,3±1,1; NR: 2,7±0,8	R: 39,0±15,0; NR: 52,0±10,0	0,93	0,04	86,0	80,0	14	20
Préau S. (2010)	ΔПД (%)	Pressure	9,0	500 ml	ΔYO (%)	0,15	30–45	5,0	53,0	55,9	ND	ND	R: 2,3±1,1; NR: 2,7±0,8	R: 39,0±15,0; NR: 52,0±10,0	0,86	0,08	79,0	85,0	14	20
Monnet X. (2006)	ΔABF (%)	Cardiac output	10,0	500 ml	ΔABF (%)	0,15	45	1,0	58,0	62,0	ND	ND	ND	ND	0,96	0,02	97,0	94,0	37	34
Monnet X. (2006)	ΔПД (%)	Pressure	12,0	500 ml	ΔABF (%)	0,15	45	1,0	58,0	62,0	ND	ND	ND	ND	0,75	0,06	60,0	85,0	37	34
Monnet X. (2009)	ΔСИ (%)	Cardiac output	10,0	500 ml	ΔCH (%)	0,15	45	1,0	ND	ND	ND	ND	R: 2,3±1,1; NR: 3,4±1,3	ND	0,94	0,28	91,0	100,0	23	11
Monnet X. (2009)	ΔПД (%)	Pressure	11,0	500 ml	ΔCH (%)	0,15	45	1,0	ND	ND	ND	ND	R: 2,3±1,1; NR: 3,4±1,3	ND	0,68	0,48	48,0	91,0	23	11
Saugel B. (2013)	ΔCPI (%)	ΔCPI (%)	15,0	7 ml/kg	ΔCH (%)	0,15	45	2,0	60,0	71,0	ND	ND	3,9 (IQR 3,4–4,7)	ND	0,59	0,07	100,0	17,6	7	17
Saugel B. (2013)	ΔSBP (%)	Pressure	15,0	7 ml/kg	ΔCH (%)	0,15	45	2,0	60,0	71,0	ND	ND	3,9 (IQR 3,4–4,7)	ND	0,47	0,58	71,4	23,5	7	17
Saugel B. (2013)	ΔСИ (%)	Cardiac output	15,0	7 ml/kg	ΔCH (%)	0,15	45	2,0	60,0	71,0	ND	ND	3,9 (IQR 3,4–4,7)	ND	0,63	0,33	42,9	82,4	7	17
Marik P.E. (2013)	ΔIYO (%)	Cardiac output	10,0	500 ml	ΔIYO (%)	0,10	45	3,0	64,0	53,0	ND	ND	ND	ND	0,97	0,07	94,0	100,0	18	16
Marik P.E. (2013)	ΔКровоток в сонной артерии (%)	Arterial blood flow	20,0	500 ml	ΔIYO (%)	0,10	45	3,0	64,0	53,0	ND	ND	ND	ND	0,90	0,22	94,0	86,0	18	16
Xu J. (2017)	ΔPtcO ₂ (%)	ΔPtcO ₂ (%)	13,0	250 ml	ΔYO (%)	0,10	45	ND	71,0	61,8	19,0±7,0	R: 5,5±2,6; NR: 6,0±2,3	R: 3,4±1,4; NR: 3,4±1,2	R: 57,4±22,7; NR: 63,8±27,6	0,86	0,36	93,0	75,0	14	20
Xu J. (2017)	Δ SV (%)	Cardiac output	10,0	250 ml	ΔYO (%)	0,10	45	ND	71,0	61,8	19,0±7,0	R: 5,5±2,6; NR: 6,0±2,3	R: 3,4±1,4; NR: 3,4±1,2	R: 57,4±22,7; NR: 63,8±27,6	0,96	0,21	100,0	95,0	14	20
Si X. (2018)	Δ SV (%)	Cardiac output	12,0	250 ml	ΔYO (%)	0,15	30–45	5,0	58,0	80,0	16,0±6,0	6,6±1,9	ND	61,0±20,0	0,94	0,04	92,0	86,0	26	14

Si X. (2018)	Δ CB (%)	Cardiac output	7,0	250 ml	Δ YO (%)	0,15	30–45	5,0	58,0	80,0	16,0 $\pm$ 6,0	6,6 $\pm$ 1,9	ND	61,0 $\pm$ 20,0	0,86	0,06	81,0	86,0	26	14
Si X. (2018)	Δ SBP (%)	Pressure	5,0	250 ml	Δ YO (%)	0,15	30–45	5,0	58,0	80,0	16,0 $\pm$ 6,0	6,6 $\pm$ 1,9	ND	61,0 $\pm$ 20,0	0,78	0,07	69,0	78,0	26	14
Si X. (2018)	Δ SBP (%)	Pressure	7,0	250 ml	Δ YO (%)	0,15	30–45	5,0	58,0	80,0	16,0 $\pm$ 6,0	6,6 $\pm$ 1,9	ND	61,0 $\pm$ 20,0	0,77	0,08	69,0	72,0	26	14
Si X. (2018)	Δ HR (%)	Δ HR (%)	–5,0	250 ml	Δ YO (%)	0,15	30–45	5,0	58,0	80,0	16,0 $\pm$ 6,0	6,6 $\pm$ 1,9	ND	61,0 $\pm$ 20,0	0,80	0,07	65,0	93,0	26	14
Si X. (2018)	Δ ПД (%)	Pressure	5,0	250 ml	Δ YO (%)	0,15	30–45	5,0	58,0	80,0	16,0 $\pm$ 6,0	6,6 $\pm$ 1,9	ND	61,0 $\pm$ 20,0	0,62	0,09	62,0	79,0	26	14
Elsayed A.I. (2021)	Δ CO (%)	Cardiac output	6,5	4 ml/kg	Δ CB (%)	0,15	45	1,5	60,0	60,9	R: 19,8 $\pm$ 6,9; NR: 19,9 $\pm$ 5,0	R: 4,5 $\pm$ 1,2; NR: 5,1 $\pm$ 0,8	ND	ND	0,95	0,19	93,8	86,7	16	30
Elsayed A.I. (2021)	Δ PPV (%)	Δ PPV (%)	2,5	4 ml/kg	Δ CB (%)	0,15	45	1,5	60,0	60,9	R: 19,8 $\pm$ 6,9; NR: 19,9 $\pm$ 5,0	R: 4,5 $\pm$ 1,2; NR: 5,1 $\pm$ 0,8	ND	ND	0,88	0,35	87,5	80,0	16	30

Note. Δ SBP – change in systolic blood pressure; Δ MAP – change in mean arterial pressure; Δ PPV – change in pulse pressure variation; Δ SVV – change in stroke volume variation; Δ SVI – change in stroke volume index; Δ PP – change in pulse pressure; CO – cardiac output; Δ CO – change in cardiac output; CI – cardiac index; Δ CI – change in cardiac index; SV – stroke volume; Δ SV – change in stroke volume; Δ HR – change in heart rate; Δ ABF – change in aortic blood flow; APACHE II – Acute Physiology And Chronic Health Evaluation II; AUROC – area under the receiver operating characteristic curve; Δ CPI – change in cardiac power index; Δ EtCO₂ – change in end-tidal carbon dioxide concentration; IQR – interquartile range; ND – no data; NR – non-responders; PLR – passive leg raising; Δ PtcO₂ – change in transcutaneous partial pressure of oxygen; R – responders; SD – standard deviation; SE – sensitivity; SP – specificity; Δ VF – change in volumetric flow; Δ Vpeak – change in peak arterial blood flow velocity.

Table. P4. Summary of outcome data from the included studies (CINeMA network meta-analysis)

Study	Nº	Parameter	AUROC	SD	N	RoB	Indirectness
Taccheri T. 2021	1	Inferior vena cava respiratory index (absolute changes).	0,56	0,11	30	M	1
Taccheri T. 2021	1	SVV	0,90	0,07	30	M	1
Taccheri T. 2021	1	Inferior vena cava respiratory index	0,76	0,10	30	M	1
Taccheri T. 2021	1	PPV	0,98	0,02	30	M	1
Zhao Z. 2022	2	PPV	0,54	0,35	40	M	1
Zhao Z. 2022	2	SVV	0,57	0,54	40	M	1
Zhao Z. 2022	2	Cardiac output	0,92	0,27	40	M	1
Wu J. 2018	3	Cardiac output	0,92	0,33	62	M	1
Wu J. 2018	3	Arterial blood flow	0,90	0,28	62	M	1
Lakhal K. 2010	4	Cardiac output	0,89	0,33	102	L	1
Lakhal K. 2010	4	pressure	0,76	0,43	102	L	1
Monnet X. 2013	5	pressure	0,65	0,48	40	H	1
Monnet X. 2013	5	Cardiac output	0,98	0,19	40	H	1
Monnet X. 2013	5	EtCO ₂	0,93	0,28	40	H	1
Monge García M.I. 2012	6	Cardiac output	0,97	0,03	37	M	1
Monge García M.I. 2012	6	EtCO ₂	0,94	0,03	37	M	1
Monge García M.I. 2012	6	pressure	0,73	0,09	37	M	1
Ma G. 2020	7	Cardiac output	0,93	0,28	123	L	1
Ma G. 2020	7	SVV	0,90	0,34	123	L	1
Krige A. 2016	8	SVV	0,56	0,61	33	H	1
Krige A. 2016	8	Cardiac output	0,85	0,52	33	H	1
Préau S. 2010	9	Cardiac output	0,94	0,04	34	L	1
Préau S. 2010	9	Arterial blood flow	0,93	0,04	34	L	1
Préau S. 2010	9	pressure	0,86	0,08	34	L	1
Monnet X. 2006	10	Cardiac output	0,96	0,02	71	L	1
Monnet X. 2006	10	pressure	0,75	0,06	71	L	1
Monnet X. 2009	11	Cardiac output	0,94	0,28	34	M	1
Monnet X. 2009	11	pressure	0,68	0,48	34	M	1
Saugel B. 2013	12	CPI	0,59	0,07	24	L	1
Saugel B. 2013	12	pressure	0,47	0,58	24	L	1
Saugel B. 2013	12	Cardiac output	0,63	0,33	24	L	1
Marik P.E. 2013	13	Cardiac output	0,97	0,07	34	L	1
Marik P.E. 2013	13	Arterial blood flow	0,90	0,22	34	L	1
Xu J. 2017	14	PtcO ₂	0,86	0,36	34	H	1
Xu J. 2017	14	Cardiac output	0,96	0,21	34	H	1
Si X. 2018	15	Cardiac output	0,94	0,04	40	M	1
Si X. 2018	15	pressure	0,78	0,07	40	M	1
Si X. 2018	15	HR	0,80	0,07	40	M	1
Elsayed A.I. 2021	16	Cardiac output	0,95	0,19	46	M	1
Elsayed A.I. 2021	16	PPV	0,88	0,35	46	M	1

Note. PPV – pulse pressure variation; SVV – stroke volume variation; HR – heart rate; AUROC – area under the receiver operating characteristic curve; CPI – cardiac power index; EtCO₂ – end-tidal carbon dioxide concentration; PtcO₂ – transcutaneous partial pressure of oxygen; RoB – risk of bias (L – low, M – moderate, H – high); SD – standard deviation; indirectness: 1 – low, 2 – moderate, 3 – high.

Table. P5. Characteristics table for the network meta-analysis (NMA).

Parameter	Value
Number of interventions	11
Number of studies	16
Total number of patients in the network	1843
Total number of possible pairwise comparisons	55
Total number of pairwise comparisons with direct data	18
Is the network connected?	True
Number of two-arm studies	9
Number of multi-arm studies	7
Mean outcome	0,8407

Table. P6. League table (Bayesian network meta-analysis, NMA)

Arterial blood flow	0,05 (−0,06; 0,17)	−0,29 (−0,53; −0,07)	−0,49 (−0,73; −0,27)	0,00 (−0,23; 0,24)	0,05 (−0,12; 0,22)	−0,10 (−0,30; 0,10)	−0,10 (−0,28; 0,07)	−0,13 (−0,26; −0,01)	−0,05 (−0,31; 0,21)	−0,12 (−0,30; 0,04)
−0,05 (−0,17; 0,06)	Cardiac output	−0,35 (−0,56; −0,15)	−0,55 (−0,76; −0,35)	−0,05 (−0,26; 0,16)	0,00 (−0,13; 0,13)	−0,15 (−0,32; 0,02)	−0,15 (−0,3; −0,02)	−0,19 (−0,26; −0,11)	−0,10 (−0,34; 0,14)	−0,18 (−0,31; −0,05)
0,29 (0,07; 0,53)	0,35 (0,15; 0,56)	Inferior vena cava respiratory index	−0,20 (−0,39; 0,00)	0,30 (0,01; 0,59)	0,34 (0,11; 0,59)	0,19 (−0,07; 0,46)	0,19 (0,01; 0,37)	0,16 (−0,05; 0,38)	0,25 (−0,06; 0,56)	0,17 (−0,01; 0,35)
0,49 (0,27; 0,73)	0,55 (0,35; 0,76)	0,20 (0,00; 0,39)	Inferior vena cava respiratory index (absolute changes)	0,50 (0,21; 0,79)	0,54 (0,31; 0,79)	0,39 (0,13; 0,66)	0,39 (0,21; 0,57)	0,36 (0,14; 0,58)	0,45 (0,14; 0,76)	0,37 (0,19; 0,55)
0,00 (−0,24; 0,23)	0,05 (−0,16; 0,26)	−0,30 (−0,59; −0,01)	−0,50 (−0,79; −0,21)	CPI	0,05 (−0,19; 0,29)	−0,10 (−0,37; 0,16)	−0,10 (−0,35; 0,14)	−0,14 (−0,35; 0,08)	−0,05 (−0,36; 0,27)	−0,13 (−0,37; 0,11)
−0,05 (−0,22; 0,12)	0,00 (−0,13; 0,13)	−0,34 (−0,59; −0,11)	−0,54 (−0,79; −0,31)	−0,05 (−0,29; 0,19)	EtCO₂	−0,15 (−0,36; 0,06)	−0,15 (−0,35; 0,03)	−0,18 (−0,32; −0,05)	−0,10 (−0,37; 0,17)	−0,17 (−0,37; 0,00)
0,10 (−0,10; 0,30)	0,15 (−0,02; 0,32)	−0,19 (−0,46; 0,07)	−0,39 (−0,66; −0,13)	0,10 (−0,16; 0,37)	0,15 (−0,06; 0,36)	Heart rate	0,00 (−0,22; 0,21)	−0,03 (−0,21; 0,14)	0,05 (−0,24; 0,34)	−0,02 (−0,24; 0,18)
0,10 (−0,07; 0,28)	0,15 (0,02; 0,30)	−0,19 (−0,37; −0,01)	−0,39 (−0,57; −0,21)	0,10 (−0,14; 0,35)	0,15 (−0,03; 0,35)	0,00 (−0,21; 0,22)	PPV	−0,03 (−0,18; 0,13)	0,05 (−0,21; 0,33)	−0,02 (−0,16; 0,11)
0,13 (0,01; 0,26)	0,19 (0,11; 0,26)	−0,16 (−0,38; 0,05)	−0,36 (−0,58; −0,14)	0,14 (−0,08; 0,35)	0,18 (0,05; 0,32)	0,03 (−0,14; 0,21)	0,03 (−0,13; 0,18)	Blood pressure	0,09 (−0,16; 0,34)	0,01 (−0,14; 0,16)
0,05 (−0,21; 0,31)	0,10 (−0,14; 0,34)	−0,25 (−0,56; 0,06)	−0,45 (−0,76; −0,14)	0,05 (−0,27; 0,36)	0,1 (−0,17; 0,37)	−0,05 (−0,34; 0,24)	−0,05 (−0,33; 0,21)	−0,09 (−0,34; 0,16)	PtcO₂	−0,08 (−0,35; 0,19)
0,12 (−0,04; 0,30)	0,18 (0,05; 0,31)	−0,17 (−0,35; 0,01)	−0,37 (−0,55; −0,19)	0,13 (−0,11; 0,37)	0,17 (0,00; 0,37)	0,02 (−0,18; 0,24)	0,02 (−0,11; 0,16)	−0,01 (−0,16; 0,14)	0,08 (−0,19; 0,35)	SVV

Note. PPV – pulse pressure variation; SVV – stroke volume variation; CPI – cardiac power index; EtCO₂ – end-tidal carbon dioxide concentration; PtcO₂ – transcutaneous partial pressure of oxygen.

Table. P7. League table for studies with low-to-moderate risk of bias (Bayesian network meta-analysis, NMA)

Arterial blood flow	0,05 (–0,07; 0,17)	–0,28 (–0,54; –0,04)	–0,48 (–0,74; –0,23)	0,01 (–0,24; 0,25)	0,05 (–0,16; 0,27)	–0,09 (–0,31; 0,12)	–0,10 (–0,29; 0,09)	–0,12 (–0,26; 0,01)	–0,11 (–0,31; 0,08)
–0,05 (–0,17; 0,07)	Cardiac output	–0,34 (–0,56; –0,12)	–0,54 (–0,77; –0,32)	–0,05 (–0,26; 0,17)	0,00 (–0,18; 0,19)	–0,15 (–0,33; 0,04)	–0,15 (–0,30; –0,01)	–0,17 (–0,26; –0,09)	–0,16 (–0,32; –0,02)
0,28 (0,04; 0,54)	0,34 (0,12; 0,56)	Inferior vena cava respiratory index	–0,20 (–0,41; 0,01)	0,29 (–0,02; 0,61)	0,34 (0,05; 0,63)	0,19 (–0,10; 0,48)	0,19 (–0,01; 0,38)	0,16 (–0,07; 0,40)	0,17 (–0,02; 0,37)
0,48 (0,23; 0,74)	0,54 (0,32; 0,77)	0,20 (–0,01; 0,41)	Inferior vena cava respiratory index (absolute changes)	0,49 (0,18; 0,81)	0,54 (0,25; 0,84)	0,39 (0,10; 0,69)	0,39 (0,19; 0,58)	0,36 (0,13; 0,61)	0,37 (0,18; 0,57)
–0,01 (–0,25; 0,24)	0,05 (–0,17; 0,26)	–0,29 (–0,61; 0,02)	–0,49 (–0,81; –0,18)	CPI	0,05 (–0,23; 0,33)	–0,10 (–0,38; 0,18)	–0,10 (–0,37; 0,16)	–0,13 (–0,35; 0,09)	–0,12 (–0,38; 0,15)
–0,05 (–0,27; 0,16)	0,00 (–0,19; 0,18)	–0,34 (–0,63; –0,05)	–0,54 (–0,84; –0,25)	–0,05 (–0,33; 0,23)	EtCO₂	–0,15 (–0,40; 0,10)	–0,15 (–0,39; 0,08)	–0,18 (–0,36; 0,01)	–0,16 (–0,40; 0,07)
0,09 (–0,12; 0,31)	0,15 (–0,04; 0,33)	–0,19 (–0,48; 0,10)	–0,39 (–0,69; –0,10)	0,10 (–0,18; 0,38)	0,15 (–0,10; 0,40)	Heart rate	0,00 (–0,24; 0,23)	–0,03 (–0,21; 0,16)	–0,02 (–0,26; 0,22)
0,10 (–0,09; 0,29)	0,15 (0,01; 0,30)	–0,19 (–0,38; 0,01)	–0,39 (–0,58; –0,19)	0,10 (–0,16; 0,37)	0,15 (–0,08; 0,39)	0,00 (–0,23; 0,24)	PPV	–0,03 (–0,19; 0,15)	–0,01 (–0,16; 0,13)
0,12 (–0,01; 0,26)	0,17 (0,09; 0,26)	–0,16 (–0,4; 0,07)	–0,36 (–0,61; –0,13)	0,13 (–0,09; 0,35)	0,18 (–0,01; 0,36)	0,03 (–0,16; 0,21)	0,03 (–0,15; 0,19)	Blood pressure	0,01 (–0,16; 0,18)
0,11 (–0,08; 0,31)	0,16 (0,02; 0,32)	–0,17 (–0,37; 0,02)	–0,37 (–0,57; –0,18)	0,12 (–0,15; 0,38)	0,16 (–0,07; 0,40)	0,02 (–0,22; 0,26)	0,01 (–0,13; 0,16)	–0,01 (–0,18; 0,16)	SVV

Note. PPV – pulse pressure variation; SVV – stroke volume variation; CPI – cardiac power index; EtCO₂ – end-tidal carbon dioxide concentration; MD – mean difference.

Table. P8. Estimated values of between-study variance for the network meta-analysis.

Исход	Estimated value of between-study variance τ^2 (Bayesian method).	Declared clinically meaningful effect size.
Mean difference (parameter: AUROC)	0,004*	0,1

* Heterogeneity is not significant (relative to the clinically meaningful effect size).

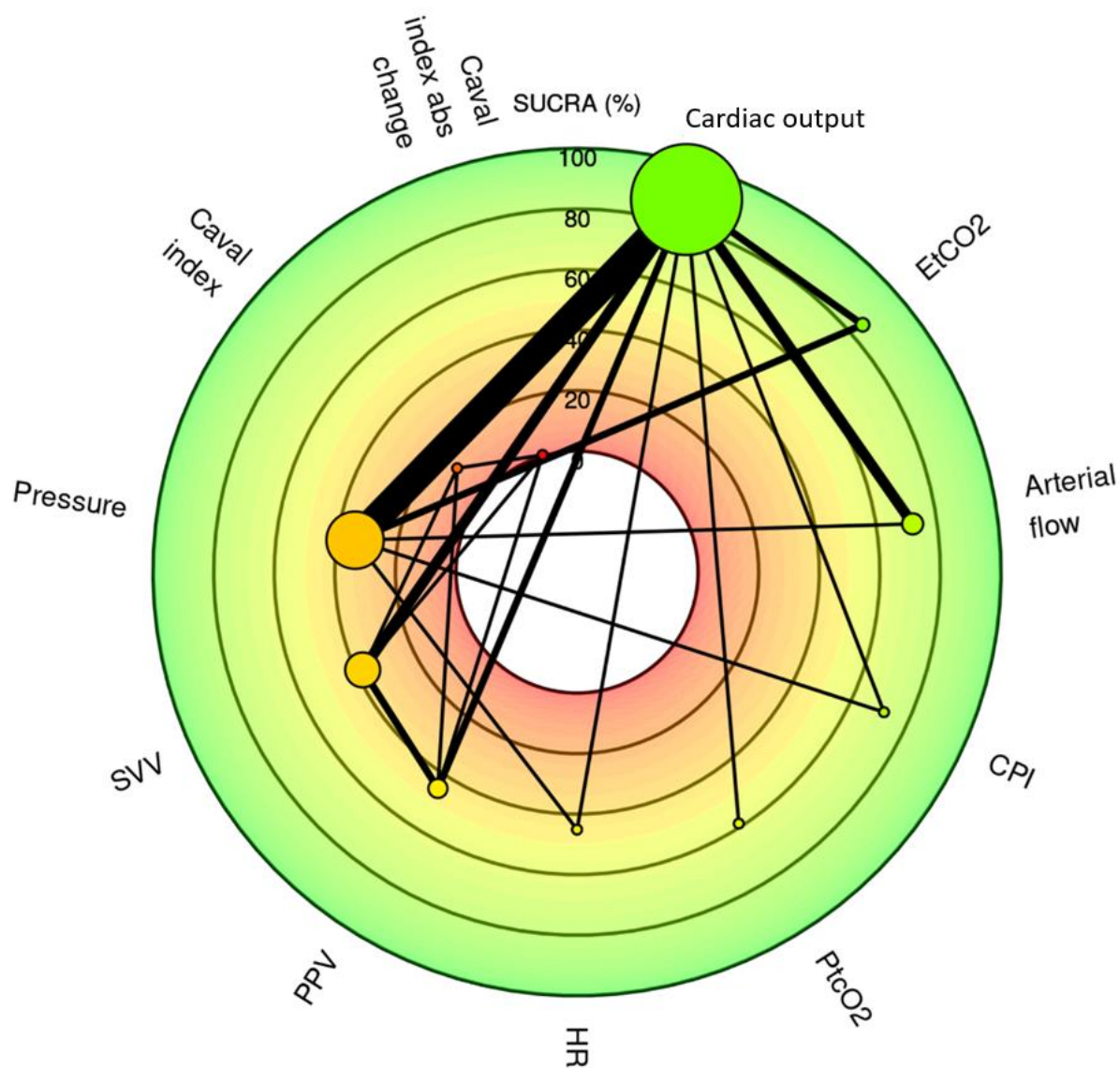
Table. P9. Contribution matrix for each comparison.

Случайный MD	Arterial blood flow: Cardiac output	Arterial blood flow: Blood pressure	Cardiac output: CPI	Cardiac output: EtCO ₂	Cardiac output : Heart rate	Cardiac output : PPV	Cardiac output: Blood pressure	Cardiac output : PtcO ₂	Cardiac output : SVV	Inferior vena cava respiratory index (absolute changes) : PPV	Inferior vena cava respiratory index (absolute changes) : SVV	Inferior vena cava respiratory index: Inferior vena cava respiratory index (absolute changes)	Inferior vena cava respiratory index: PPV	Inferior vena cava respiratory index: SVV	CPI : Blood pressure	EtCO ₂ : Blood pressure	Heart rate : Blood pressure	PPV : SVV
Mixed estimates																		
Arterial blood flow: Cardiac output	73,18	12,51	0,20	0,96	0,65	0,00	10,71	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,20	0,96	0,65	0,00
Arterial blood flow:: Blood pressure	29,84	36,02	0,47	2,28	1,54	0,00	25,55	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,47	2,28	1,54	0,00
Cardiac output: CPI	2,08	2,08	30,32	2,19	1,48	0,00	24,57	0,00	0,00	0,00	0,00	0,00	0,00	0,00	33,60	2,19	1,48	0,00
Cardiac output: EtCO ₂	0,99	0,99	68,41	1,04	0,70	0,00	11,69	0,00	0,00	0,00	0,00	0,00	0,00	0,00	14,43	1,04	0,70	0,00
Cardiac output: Heart rate	1,38	1,38	0,30	59,50	0,98	0,00	16,26	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,30	18,92	0,98	0,00
Cardiac output: PPV	1,52	1,52	0,33	1,60	53,84	0,00	17,91	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,33	1,60	21,36	0,00
Cardiac output: Blood pressure	0,00	0,00	0,00	0,00	0,00	56,06	0,00	0,00	18,88	3,06	3,06	0,00	3,11	3,11	0,00	0,00	0,00	12,71
Cardiac output: PtcO ₂	4,61	4,61	1,01	4,86	3,29	0,00	72,51	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,01	4,86	3,29	0,00
Cardiac output: SVV	0,00	0,00	0,00	0,00	0,00	0,00	0,00	100,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Inferior vena cava respiratory index (absolute changes): PPV	0,00	0,00	0,00	0,00	0,00	15,50	0,00	0,00	63,93	2,51	2,51	0,00	2,55	2,55	0,00	0,00	0,00	10,44
Inferior vena cava respiratory index (absolute changes): SVV	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	13,12	12,67	48,42	13,12	12,67	0,00	0,00	0,00	0,00
Inferior vena cava respiratory index: Inferior vena cava respiratory index (absolute changes)	0,00	0,00	0,00	0,00	0,00	2,98	0,00	0,00	2,98	10,22	0,90	11,11	47,01	13,45	0,00	0,00	0,00	11,37
Inferior vena cava respiratory index: PPV	0,00	0,00	0,00	0,00	0,00	3,08	0,00	0,00	3,08	0,93	10,16	11,08	13,93	45,97	0,00	0,00	0,00	11,78
Inferior vena cava respiratory index: SVV	0,00	0,00	0,00	0,00	0,00	2,97	0,00	0,00	2,97	46,66	13,44	11,30	10,39	0,91	0,00	0,00	0,00	11,38

CPI : Blood pressure	0,00	0,00	0,00	0,00	0,00	3,07	0,00	0,00	3,07	13,91	45,65	11,26	0,94	10,32	0,00	0,00	0,00	11,78
EtCO ₂ : Blood pressure	1,69	1,69	0,37	23,26	1,20	0,00	20,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,37	50,21	1,20	0,00
Heart rate : Blood pressure	1,55	1,55	0,34	1,64	21,87	0,00	18,35	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,34	1,64	52,73	0,00
PPV : SVV	0,00	0,00	0,00	0,00	0,00	10,00	0,00	0,00	10,00	8,36	8,36	0,00	8,50	8,50	0,00	0,00	0,00	46,29
Indirect estimates																		
Arterial blood flow: CPI	34,67	14,90	33,91	0,07	0,04	0,00	0,65	0,00	0,00	0,00	0,00	0,00	0,00	0,00	15,66	0,07	0,04	0,00
Arterial blood flow: Inferior vena cava respiratory index	24,39	5,26	0,10	0,46	0,28	14,27	4,42	0,00	15,38	2,10	2,46	4,56	12,56	12,54	0,10	0,46	0,28	0,38
Arterial blood flow: Inferior vena cava respiratory index (absolute changes)	24,39	5,24	0,10	0,46	0,28	14,25	4,40	0,00	15,39	12,49	12,50	4,64	2,13	2,50	0,10	0,46	0,28	0,38
Arterial blood flow: EtCO ₂	32,35	15,48	0,08	28,32	0,25	0,00	3,70	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,08	19,50	0,25	0,00
Arterial blood flow: Heart rate	31,33	15,69	0,10	0,48	25,95	0,00	4,80	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,10	0,48	21,07	0,00
Arterial blood flow: PPV	33,74	5,60	0,10	0,48	0,32	28,03	4,70	0,00	11,30	1,84	1,84	0,00	1,69	1,69	0,10	0,48	0,32	7,78
Arterial blood flow: PtcO ₂	36,59	8,49	0,15	0,72	0,49	0,00	7,14	45,08	0,00	0,00	0,00	0,00	0,00	0,00	0,15	0,72	0,49	0,00
Arterial blood flow: SVV	35,05	5,77	0,10	0,48	0,32	8,85	4,87	0,00	31,97	1,51	1,51	0,00	1,35	1,35	0,10	0,48	0,32	5,99
CPI : EtCO ₂	0,29	0,29	31,73	28,19	0,21	0,00	3,05	0,00	0,00	0,00	0,00	0,00	0,00	0,00	16,25	19,79	0,21	0,00
CPI : Heart rate	0,40	0,40	30,82	0,42	25,86	0,00	4,15	0,00	0,00	0,00	0,00	0,00	0,00	0,00	16,29	0,42	21,25	0,00
CPI : PPV	0,50	0,50	32,15	0,52	0,35	28,03	5,33	0,00	10,81	1,84	1,84	0,00	1,59	1,59	6,70	0,52	0,35	7,38
CPI : PtcO ₂	0,74	0,74	34,21	0,78	0,53	0,00	7,79	44,05	0,00	0,00	0,00	0,00	0,00	0,00	9,85	0,78	0,53	0,00
CPI : SVV	0,50	0,50	33,46	0,52	0,35	8,36	5,50	0,00	31,97	1,49	1,49	0,00	1,28	1,28	6,86	0,52	0,35	5,59
Cardiac output: Inferior vena cava respiratory index	0,00	0,00	0,00	0,00	0,00	21,69	0,00	0,00	24,08	3,52	4,26	7,78	18,84	19,16	0,00	0,00	0,00	0,67
Cardiac output: Inferior vena cava respiratory index (absolute changes)	0,00	0,00	0,00	0,00	0,00	21,66	0,00	0,00	24,05	18,74	19,06	7,91	3,59	4,32	0,00	0,00	0,00	0,67
Inferior vena cava respiratory index: CPI	0,50	0,50	22,80	0,51	0,30	14,27	5,05	0,00	14,89	2,10	2,37	4,47	12,56	12,14	6,36	0,51	0,30	0,38
Inferior vena cava respiratory index: EtCO ₂	0,69	0,69	0,15	19,83	0,43	14,27	7,33	0,00	14,16	2,10	2,38	4,47	12,56	11,40	0,15	8,59	0,43	0,38
Inferior vena cava respiratory index: Heart rate	0,76	0,76	0,17	0,73	17,95	14,27	8,27	0,00	13,61	2,10	2,30	4,39	12,56	10,93	0,17	0,73	9,93	0,38
Inferior vena cava respiratory	2,02	2,02	0,40	1,94	1,22	14,27	24,17	0,00	15,48	2,16	2,55	4,71	12,56	12,48	0,40	1,94	1,22	0,45

index: Blood pressure																		
Inferior vena cava respiratory index: P _t CO ₂	0,00	0,00	0,00	0,00	0,00	14,70	0,00	31,20	16,50	2,68	3,19	5,87	12,56	12,77	0,00	0,00	0,00	0,53
Inferior vena cava respiratory index (absolute changes): CPI	0,50	0,50	22,80	0,51	0,30	14,25	5,04	0,00	14,90	12,49	12,11	4,54	2,13	2,41	6,34	0,51	0,30	0,38
Inferior vena cava respiratory index (absolute changes): EtCO ₂	0,69	0,69	0,15	19,83	0,43	14,25	7,31	0,00	14,16	12,49	11,36	4,55	2,13	2,42	0,15	8,57	0,43	0,38
Inferior vena cava respiratory index (absolute changes): Heart rate	0,76	0,76	0,17	0,73	17,95	14,25	8,25	0,00	13,61	12,49	10,89	4,47	2,13	2,34	0,17	0,73	9,91	0,38
Inferior vena cava respiratory index (absolute changes): Blood pressure	2,00	2,00	0,40	1,94	1,22	14,25	24,17	0,00	15,49	12,49	12,45	4,79	2,20	2,59	0,40	1,94	1,22	0,45
Inferior vena cava respiratory index (absolute changes): P _t CO ₂	0,00	0,00	0,00	0,00	0,00	14,68	0,00	31,16	16,48	12,49	12,70	5,97	2,72	3,24	0,00	0,00	0,00	0,53
EtCO ₂ : Heart rate	0,11	0,11	0,02	26,68	25,45	0,00	1,10	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02	22,65	23,87	0,00
EtCO ₂ : PPV	0,69	0,69	0,15	29,18	0,49	28,03	7,60	0,00	10,08	1,84	1,84	0,00	1,60	1,60	0,15	8,93	0,49	6,64
EtCO ₂ : P _t CO ₂	1,03	1,03	0,23	29,75	0,74	0,00	10,84	42,59	0,00	0,00	0,00	0,00	0,00	0,00	0,23	12,84	0,74	0,00
EtCO ₂ : SVV	0,69	0,69	0,15	29,75	0,49	7,99	8,14	0,00	31,23	1,50	1,50	0,00	1,28	1,28	0,15	9,47	0,49	5,22
Heart rate : ppv	0,76	0,76	0,17	0,80	26,92	27,66	8,73	0,00	9,71	1,80	1,80	0,00	1,56	1,56	0,17	0,80	10,45	6,36
Heart rate : P _t CO ₂	1,14	1,14	0,25	1,20	26,92	0,00	11,94	41,45	0,00	0,00	0,00	0,00	0,00	0,00	0,25	1,20	14,53	0,00
Heart rate : SVV	0,76	0,76	0,17	0,80	26,92	7,91	9,55	0,00	30,28	1,42	1,42	0,00	1,28	1,28	0,17	0,80	11,28	5,22
PPV : Blood pressure	2,29	2,29	0,40	1,94	1,31	28,03	33,51	0,00	11,43	1,84	1,84	0,00	1,87	1,87	0,40	1,94	1,31	7,73
PPV : P _t CO ₂	0,00	0,00	0,00	0,00	0,00	28,03	0,00	41,13	13,10	2,30	2,30	0,00	2,33	2,33	0,00	0,00	0,00	8,47
Blood pressure : P _t CO ₂	3,07	3,07	0,67	3,24	2,19	0,00	36,26	45,42	0,00	0,00	0,00	0,00	0,00	0,00	0,67	3,24	2,19	0,00
Blood pressure : SVV	2,30	2,30	0,50	2,00	1,31	8,97	34,83	0,00	31,97	1,51	1,51	0,00	1,53	1,53	0,50	2,00	1,31	5,93
P _t CO ₂ : SVV	0,00	0,00	0,00	0,00	0,00	10,76	0,00	42,72	31,97	1,89	1,89	0,00	1,92	1,92	0,00	0,00	0,00	6,96

Note. PPV – pulse pressure variation; SVV – stroke volume variation; CPI – cardiac power index; EtCO₂ – end-tidal carbon dioxide concentration; MD – mean difference; P_tCO₂ – transcutaneous partial pressure of oxygen. Columns refer to comparisons with direct data, and rows refer to relative comparisons within the network meta-analysis (NMA).



Treatment	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank 8	Rank 9	Rank 10	Rank 11	SUCRA
Arterial_flow	0.07	0.12	0.23	0.29	0.18	0.07	0.03	0.01	0.00	0.00	0.00	71.96
Cardiac_output	0.25	0.42	0.25	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	88.31
Caval_index	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.08	0.84	0.02	12.39
Caval_index_abs_change	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.97	0.36
CPI	0.22	0.12	0.14	0.16	0.14	0.08	0.05	0.04	0.04	0.01	0.00	71.44
EtCO2	0.32	0.23	0.20	0.14	0.07	0.02	0.01	0.00	0.00	0.00	0.00	84.79
HR	0.01	0.02	0.04	0.09	0.15	0.18	0.15	0.15	0.16	0.04	0.00	45.09
PPV	0.00	0.01	0.03	0.07	0.16	0.22	0.20	0.18	0.13	0.01	0.00	44.99
Pressure	0.00	0.00	0.00	0.01	0.05	0.14	0.24	0.28	0.24	0.03	0.00	34.06
PtcO2	0.12	0.07	0.09	0.13	0.16	0.11	0.09	0.08	0.11	0.04	0.00	58.81
SVV	0.00	0.00	0.01	0.04	0.09	0.16	0.21	0.23	0.24	0.01	0.00	37.82

Fig. P1. Radial plot of SUCRA values and ranking scores.

Note. CPI – cardiac power index; EtCO₂ – end-tidal carbon dioxide concentration; HR – heart rate; PPV – pulse pressure variation; PtcO₂ – transcutaneous partial pressure of oxygen; SVV – stroke volume variation.

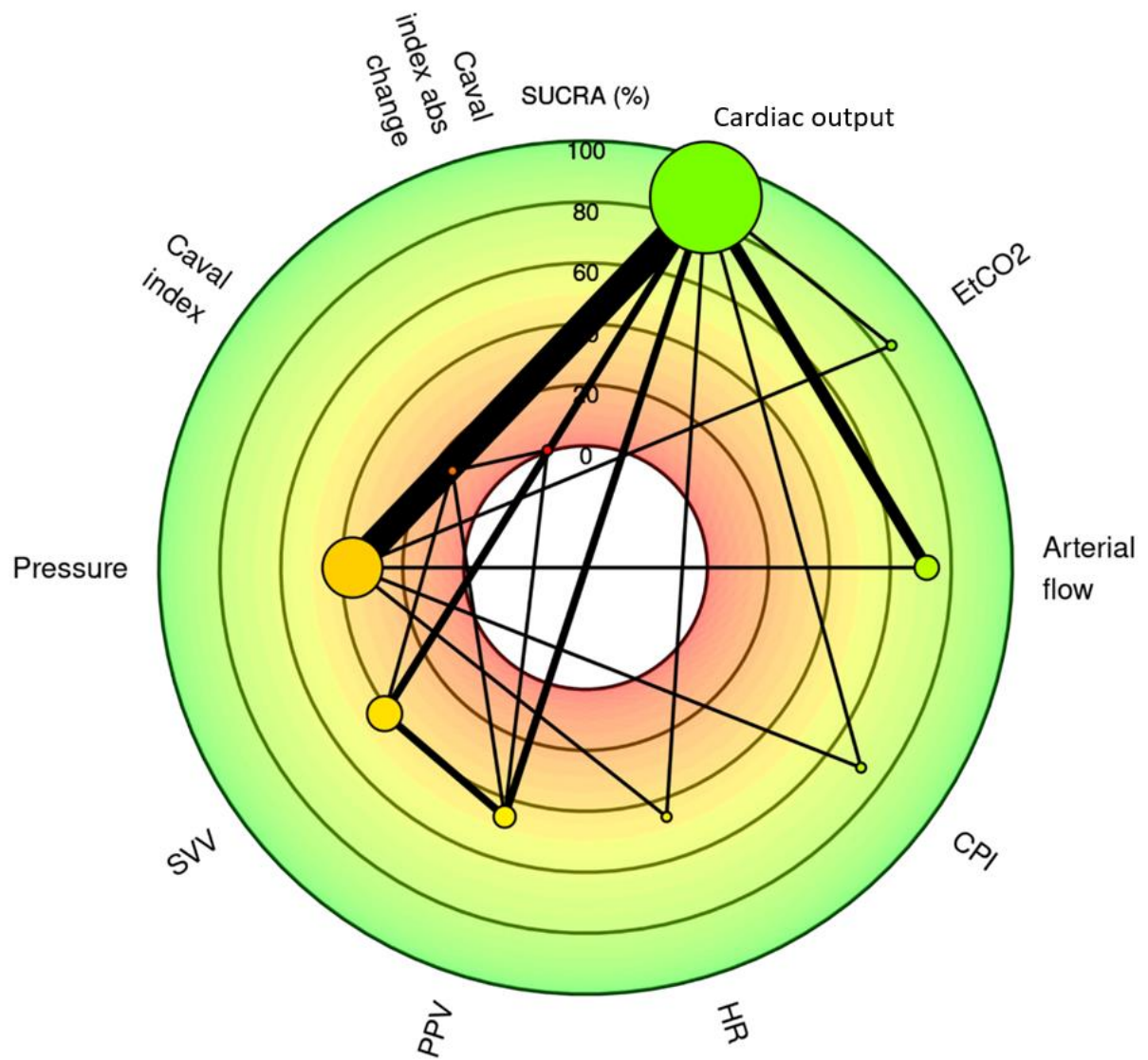


Fig. P2. Radial plot of SUCRA values and ranking scores for studies with low-to-moderate risk of bias (sensitivity analysis).

Note. CPI – cardiac power index; EtCO₂ – end-tidal carbon dioxide concentration; HR – heart rate; PPV – pulse pressure variation; PtcO₂ – transcutaneous partial pressure of oxygen; SVV – stroke volume variation.

Confidence In Network Meta Analysis - CINeMA 2.0.0 - Project: NMA CINEMA

NMA CINEMA

Comparison	Number of Studies	Within-study bias	Reporting bias	Indirectness	Imprecision	Heterogeneity	Incoherence	Confidence rating	Reason(s) for downgrading
Mixed evidence									
Arterial_flow vs Cardiac_output	3	No concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Moderate	Imprecision
Arterial_flow vs Pressure	1	No concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Moderate	Heterogeneity
CPI vs Cardiac_output	1	No concerns	Low risk	No concerns	Major concerns	No concerns	No concerns	Low	Imprecision
CPI vs Pressure	1	No concerns	Low risk	No concerns	Some concerns	No concerns	No concerns	Moderate	Imprecision
Cardiac_output vs EtCO2	2	Some concerns	Low risk	No concerns	No concerns	Major concerns	No concerns	Low	Heterogeneity
Cardiac_output vs HR	1	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Moderate	Heterogeneity
Cardiac_output vs PPV	2	Some concerns	Low risk	No concerns	No concerns	Some concerns	Some concerns	Very low	Within-study bias Heterogeneity Incoherence
Cardiac_output vs Pressure	8	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	High	
Cardiac_output vs PtcO2	1	Major concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Within-study bias Heterogeneity Incoherence
Cardiac_output vs SVV	3	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Moderate	Heterogeneity
Caval_index vs Caval_index_abs_change	1	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Caval_index vs PPV	1	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	Moderate	Within-study bias
Caval_index vs SVV	1	Some concerns	Low risk	No concerns	No concerns	Some concerns	No concerns	Moderate	Heterogeneity
Caval_index_abs_change vs PPV	1	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	High	
Caval_index_abs_change vs SVV	1	Some concerns	Low risk	No concerns	No concerns	No concerns	No concerns	High	
EtCO2 vs Pressure	2	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low	Within-study bias Incoherence
HR vs Pressure	1	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Moderate	Heterogeneity
PPV vs SVV	2	Some concerns	Low risk	No concerns	Some concerns	Some concerns	No concerns	Moderate	Heterogeneity

Confidence In Network Meta Analysis - CINeMA 2.0.0 - Project: NMA CINeMA

NMA CINeMA

Indirect evidence

Arterial_flow vs CPI	--	No concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Imprecision Incoherence
Arterial_flow vs Caval_index	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Arterial_flow vs Caval_index_abs_change	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Arterial_flow vs EtCO2	--	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Imprecision Incoherence
Arterial_flow vs HR	--	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Imprecision Incoherence
Arterial_flow vs PPV	--	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Imprecision Incoherence
Arterial_flow vs PtcO2	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Within-study bias Imprecision Incoherence
Arterial_flow vs SVV	--	No concerns	Low risk	No concerns	Some concerns	No concerns	Major concerns	Very low	Imprecision Incoherence
CPI vs Caval_index	--	Some concerns	High risk	No concerns	No concerns	No concerns	Major concerns	Very low	Within-study bias Reporting bias Incoherence
CPI vs Caval_index_abs_change	--	Some concerns	High risk	No concerns	No concerns	No concerns	Major concerns	Very low	Reporting bias Incoherence
CPI vs EtCO2	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Imprecision Incoherence
CPI vs HR	--	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Imprecision Incoherence
CPI vs PPV	--	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Imprecision Incoherence
CPI vs PtcO2	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Within-study bias Imprecision Incoherence
CPI vs SVV	--	No concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Imprecision Incoherence
Cardiac_output vs Caval_index	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Cardiac_output vs Caval_index_abs_change	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Caval_index vs EtCO2	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Caval_index vs HR	--	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low	Heterogeneity Incoherence
Caval_index vs Pressure	--	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low	Heterogeneity Incoherence
Caval_index vs PtcO2	--	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low	Within-study bias Heterogeneity Incoherence
Caval_index_abs_change vs EtCO2	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Caval_index_abs_change vs HR	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Caval_index_abs_change vs Pressure	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Low	Incoherence
Caval_index_abs_change vs PtcO2	--	Some concerns	Low risk	No concerns	No concerns	No concerns	Major concerns	Very low	Within-study bias Incoherence
EtCO2 vs HR	--	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low	Heterogeneity Incoherence
EtCO2 vs PPV	--	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low	Heterogeneity Incoherence
EtCO2 vs PtcO2	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Within-study bias Imprecision Incoherence
EtCO2 vs SVV	--	Some concerns	Low risk	No concerns	No concerns	Some concerns	Major concerns	Very low	Heterogeneity Incoherence
HR vs PPV	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Imprecision Incoherence
HR vs PtcO2	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Within-study bias Imprecision Incoherence
HR vs SVV	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Imprecision Incoherence
PPV vs Pressure	--	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Imprecision Incoherence
PPV vs PtcO2	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Within-study bias Imprecision Incoherence
Pressure vs PtcO2	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Within-study bias Imprecision Incoherence
Pressure vs SVV	--	Some concerns	Low risk	No concerns	Some concerns	Some concerns	Major concerns	Very low	Imprecision Incoherence
PtcO2 vs SVV	--	Some concerns	Low risk	No concerns	Major concerns	No concerns	Major concerns	Very low	Within-study bias Imprecision Incoherence

Fig. P3. Assessment of the certainty of evidence (CINeMA approach).

Note. CPI – cardiac power index; EtCO₂ – end-tidal carbon dioxide concentration; HR – heart rate; PPV – pulse pressure variation; PtcO₂ – transcutaneous partial pressure of oxygen; SVV – stroke volume variation.

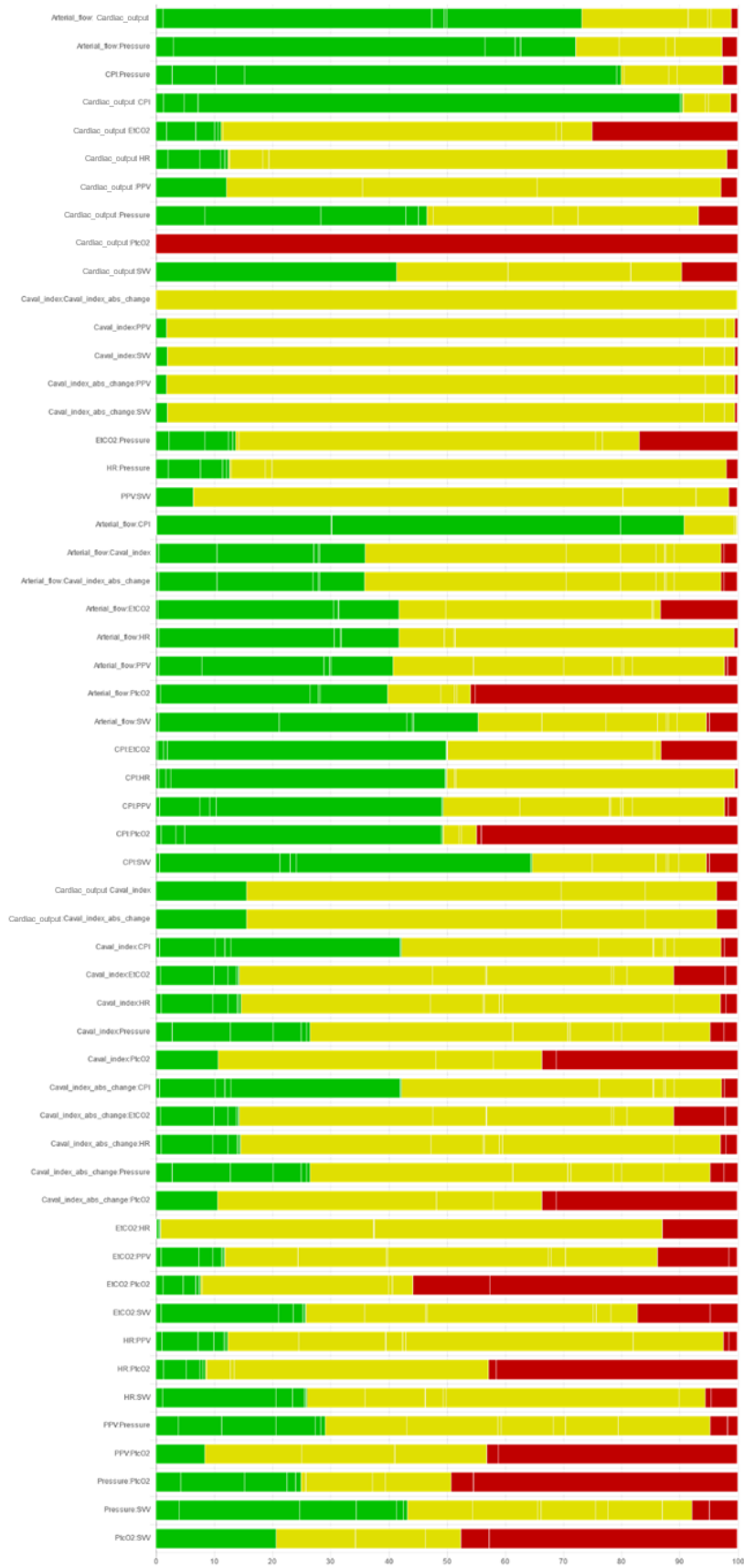


Fig. P4. Bar chart of the risk of bias for the studied comparisons.

Note. CPI – cardiac power index; EtCO₂ – end-tidal carbon dioxide concentration; HR – heart rate; PPV – pulse pressure variation; PtcO₂ – transcutaneous partial pressure of oxygen; SVV – stroke volume variation.

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