



ELECTRONIC SUPPLEMENTARY MATERIAL

Lalgudi Ganesa S *et al.*: Brain-based arterial pulse pressure threshold for death determination: a systematic review

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eAppendix 1 Search strategy

Database: Ovid MEDLINE(R) ALL 1946 to April 16, 2021

Date protocol search conducted: April 18, 2021, updated August 21, 2021

Strategy:

- 1 Death/ and Blood Circulation/ (54)
- 2 exp *Heart Arrest/ (36220)
- 3 ((arrest\$1 or dead or death\$1 or flat-lin* or flatlin*) adj2 (cardi* or circulat* or heart)).tw,kf. (95346)
- 4 asystol*.tw,kf. (4404)
- 5 (cessation adj5 (cardiac rhythm\$1 or circulat* or heart function*)).tw,kf. (237)
- 6 ((cessation or terminat*) adj3 cardi* resuscitation).tw,kf. (43)
- 7 or/1-6 [Set 1: cardiac arrest or circulatory death] (107533)
- 8 Organ Transplantation/mo (327)
- 9 (cDCD or DCD or DCDD).ti. (326)
- 10 dead donor rule*.tw,kf. (161)
- 11 ((donor* or donation*) adj3 non heart beating).tw,kf. (1172)
- 12 or/8-11 [Set 2: Donation after cardiac death] (1962)
- 13 (auto-resuscitat* or autoresuscitat*).tw,kf. (168)
- 14 Lazarus.ti. (164)
- 15 Lazarus phenomenon.tw,kf. (45)
- 16 "return of circulation".tw,kf. (169)
- 17 or/13-16 [Set 3: autoresuscitation] (486)
- 18 ((confirm* or criteri* or declar* or determin* or diagnos*) adj2 death\$1).tw,kf. [Set 4: death determination] (9771)
- 19 Monitoring, Physiologic/ (56044)
- 20 "Sensitivity and Specificity"/ (353657)
- 21 Vital Signs/ (1509)
- 22 detect*.tw,kf. (2451361)
- 23 measurement*.ti. (188472)
- 24 measurement*.ab. /freq=2 (262413)
- 25 (mm Hg or mmHg).tw,kf. (155212)
- 26 monitor*.tw,kf. (850481)
- 27 vital sign\$1.tw,kf. (15722)
- 28 or/19-27 [Set 5: vital signs monitoring] (3768638)
- 29 Arterial Pressure/ (6032)
- 30 Blood Pressure/ph [Physiology] (52978)
- 31 Blood Pressure Determination/ (28666)
- 32 ((arter* or aortic) adj3 (pressure\$1 or tension\$1)).tw,kf. (123473)
- 33 arterial line\$1.tw,kf. (1449)
- 34 or/29-33 [Set 6: arterial pressure] (189030)
- 35 and/7,28,34 [Sets 1 and 5 and 6] (1550)
- 36 and/12,28,34 [Sets 2 and 5 and 6] (15)
- 37 and/17,28,34 [Sets 3 and 5 and 6] (13)
- 38 18 and 34 [Sets 4 and 6] (79)
- 39 or/35-38 (1627)

40 remove duplicates from 39 [MEDLINE results with animal studies] (1625)
41 (exp animals/ or exp animal experimentation/ or exp models animal/ or exp vertebrates/
not (exp humans/ or exp human experimentation/)) (4815550)
42 ((in-data-review or in-process or publisher or pubmed-not-medline).st. and (ape or apes or
animal* or baboon* or beagle* or cat or cats or chicken or chickens or chimp* or dog or dogs or
feline* or fish or hamster or hamsters or horse or horses or lapin* or macaque* or mouse or mice
or nonhuman* or non human* or pig or piglet* or pigs or porcine or rabbit or rabbit or raccoon
or raccoons or racehorse or racehorses or rat or rats or rodent* or swine* or sheep or
zebrafish*).ti,kf.) not (adults or children or human or humans or infants or patient or patients or
people or seniors).ti,kf. (151412)
43 41 or 42 [animal filter] (4966962)
44 40 not 43 [exclude animal studies] (1108)
45 remove duplicates from 44 [MEDLINE results for export - exclude animal studies] (1108)
46 40 not 45 [MEDLINE results for export - animal studies] (517)

eAppendix 2 PRISMA 2020 checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Page 1 - Title
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Page 4 - Abstract
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Page 5 Para 1-2
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 5 Para 4 & 5
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 6 Para 4,5 & Page 7 Para 1,2
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 6 Para 4
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Appendix 1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 7 Para 3
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 7 Para 3,4
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 3 Para 2,3
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 6 Para 3,5
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 7 Para 5 & Page 8 Para 1,2

Section and Topic	Item #	Checklist item	Location where item is reported
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Not Applicable
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 7 Para 4
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Page 7 Para 4
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Page 7 Para 4
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Page 7 Para 4
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Page 7 Para 4
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Not Applicable
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Page 7 Para 5
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Page 7 Para 5
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Figure 1
Study characteristics	17	Cite each included study and present its characteristics.	Page 9 Para 1
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Table 3
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Tables 1 & 2
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Table 3
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Not Applicable
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Not Applicable

Section and Topic	Item #	Checklist item	Location where item is reported
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Not Applicable
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Table 3
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Table 4
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Page 13 Para 1,2
	23b	Discuss any limitations of the evidence included in the review.	Pages 13 & 14
	23c	Discuss any limitations of the review processes used.	Page 14 Para 2
	23d	Discuss implications of the results for practice, policy, and future research.	Pages 13 & 14
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Page 6 Para 2
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Page 6 Para 2
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Page 6 Para 2
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Page 2 Para 2
Competing interests	26	Declare any competing interests of review authors.	Page 2 Para 3
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Page 2 Para 4

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

eAppendix 3 Synthesis Without Meta-analysis (SWiM) reporting items

The citation for the Synthesis Without Meta-analysis explanation and elaboration article is: *Campbell M, McKenzie JE, Sowden A, et al. Synthesis without meta-analysis (SWiM) in systematic reviews: reporting guideline BMJ 2020; 368: l6890.*

<http://dx.doi.org/10.1136/bmj.l6890>

SWiM is intended to complement and be used as an extension to PRISMA			
SWiM reporting item	Item description	Page in manuscript where item is reported	Other*
<i>Methods</i>			
1 Grouping studies for synthesis	1a) Provide a description of, and rationale for, the groups used in the synthesis (e.g., groupings of populations, interventions, outcomes, study design)	5 – 7	
	1b) Detail and provide rationale for any changes made subsequent to the protocol in the groups used in the synthesis	7 – 8	
2 Describe the standardised metric and transformation methods used	Describe the standardised metric for each outcome. Explain why the metric(s) was chosen, and describe any methods used to transform the intervention effects, as reported in the study, to the standardised metric, citing any methodological guidance consulted	6	
3 Describe the synthesis methods	Describe and justify the methods used to synthesise the effects for each outcome when it was not possible to undertake a meta-analysis of effect estimates	7	
4 Criteria used to prioritise results for summary and synthesis	Where applicable, provide the criteria used, with supporting justification, to select the particular studies, or a particular study, for the main synthesis or to draw conclusions from the synthesis (e.g., based on study design, risk of bias assessments, directness in relation to the review question)	6 – 8	

SWiM reporting item	Item description	Page in manuscript where item is reported	Other*
5 Investigation of heterogeneity in reported effects	State the method(s) used to examine heterogeneity in reported effects when it was not possible to undertake a meta-analysis of effect estimates and its extensions to investigate heterogeneity	7 – 8	
6 Certainty of evidence	Describe the methods used to assess certainty of the synthesis findings	8	
7 Data presentation methods	Describe the graphical and tabular methods used to present the effects (e.g., tables, forest plots, harvest plots). Specify key study characteristics (e.g., study design, risk of bias) used to order the studies, in the text and any tables or graphs, clearly referencing the studies included	7 – 8	
<i>Results</i>			
8 Reporting results	For each comparison and outcome, provide a description of the synthesised findings, and the certainty of the findings. Describe the result in language that is consistent with the question the synthesis addresses, and indicate which studies contribute to the synthesis	9 – 12	
<i>Discussion</i>			
9 Limitations of the synthesis	Report the limitations of the synthesis methods used and/or the groupings used in the synthesis, and how these affect the conclusions that can be drawn in relation to the original review question	13 – 14	

*If the information is not provided in the systematic review, give details of where this information is available (e.g., protocol, other published papers [provide citation details], or website [provide the URL]).

PRISMA=Preferred Reporting Items for Systematic Reviews and Meta-Analyses.