

# Supplementary Materials: Association of Patients' Epidemiological Characteristics and Comorbidities with Severity and Related Mortality Risk of SARS-CoV-2 Infection: Results of an Umbrella Systematic Review and Meta-Analysis

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**Table S1.** Search strategy.

Concept	Search Strategy	Results
1	(meta-analysis[Title/Abstract]) OR (systematic review[Title/Abstract])	304,020
2	(2019-nCoV[Title/Abstract]) OR (sars-cov-2[Title/Abstract]) OR (SARS-CoV-2[Title/Abstract]) OR (COVID 19[Title/Abstract])	175,811
3	1 AND 2	4,492
4	(hospitalization[Title/Abstract]) OR (intensive care unit[Title/Abstract]) OR (mechanical ventilation[Title/Abstract]) OR (endotracheal intubation[Title/Abstract]) OR (severity[Title/Abstract]) OR (death[Title/Abstract]) OR (mortality[Title/Abstract])	2,096,928
5	3 AND 4	2,022
6	(male sex[Title/Abstract]) OR (smoking[Title/Abstract]) OR (obesity[Title/Abstract]) OR (hypertension[Title/Abstract]) OR (diabetes[Title/Abstract]) OR (cardiovascular diseases[Title/Abstract]) OR (chronic obstructive pulmonary diseases[Title/Abstract]) OR (chronic kidney diseases[Title/Abstract]) OR (cerebrovascular diseases[Title/Abstract]) OR (malignancies[Title/Abstract]) OR (Cancer[Title/Abstract]) OR (chronic liver diseases[Title/Abstract])	3,269,683
7	5 AND 6	793
8	(risk factor[Title/Abstract]) OR (determinant[Title/Abstract]) OR (comorbidities[Title/Abstract]) OR (odds ratio[Title/Abstract]) OR (relative risk[Title/Abstract])	716,419
9	7 AND 8	411

**Table S2.** AMSTAR-2 Checklist.

Section and Topic	Item No	Checklist Item	Page
<b>Administrative Information</b>			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	NA
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	3
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	9

Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	NA
Support:			
Sources	5a	Indicate sources of financial or other support for the review	9
Sponsor	5b	Provide name for the review funder and/or sponsor	9
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	9
<b>Introduction</b>			
Rationale	6	Describe the rationale for the review in the context of what is already known	3
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	3, 4
<b>Methods</b>			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	4
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	4
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	4, appendix
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	3, 4
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	4
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	4
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	5
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	5
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	4
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	5
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as $I^2$ , Kendall's $\tau$ )	5
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	NA
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	NA
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	5

Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	NA
From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.			