

Supplementary material

Supplementary Table 1 EMBASE search strategy

No.	Query	Results
1.	gi OR 'gastro intestin*' OR gastrointestinal* OR diarrhea* OR constipate* OR dyspep* OR dyschezia* OR obstipat* OR dysbiosis* OR indigestion* OR dysmotilit* OR nausea* OR vomit* OR emesis* OR hematemesi* OR 'abdominal pain*' OR amylase OR lipase OR alt OR 'alanine aminotransferase*' OR ast OR 'aspartate aminotransferase*' OR bilirubin OR 'alk phos' OR 'alkaline phosphatase*' OR cea OR 'carcinoembryonic antigen*' OR 'ca19 9' OR 'carbohydrate antigen 19 9' OR ggt OR 'γ glutamyltransferase*' OR 'gamma glutamyltransferas3*' OR 'γ glutamyltransferase*' OR 'fecal calprotectin*' OR 'fecal leukocyte'	1858951
2.	((('coronavirinae'/exp OR 'coronavirus infection'/de OR coronavirus*:ti,ab,kw OR 'corona virus*':ti,ab,kw OR 'pneumonia virus*':ti,ab,kw OR cov:ti,ab,kw OR ncov:ti,ab,kw) AND (outbreak:ti,ab,kw OR wuhan:ti,ab,kw) OR covid19:ti,ab,kw OR 'covid 19':ti,ab,kw OR ((coronavirus*:ti,ab,kw OR 'corona virus*':ti,ab,kw) AND 2019:ti,ab,kw) OR 'sars cov 2':ti,ab,kw OR sars2:ti,ab,kw OR 'coronavirus*':ti,ab,kw OR 'corona virus*':ti,ab,kw OR 'ncov 2019':ti,ab,kw OR ncov:ti,ab,kw OR 'sars coronavirus 2':ti,ab,kw OR 'sars corona virus 2':ti,ab,kw OR 'severe acute respiratory syndrome cov 2':ti,ab,kw OR 'severe acute respiratory syndrome cov2':ti,ab,kw) AND [2019-2020]/py	20818
3.	#1 AND #2	1170
4.	#3 NOT ('conference abstract'/it OR 'editorial'/it OR 'review'/it OR 'short survey'/it)	1021
5.	#4 NOT ('animal cell'/de OR 'animal experiment'/de OR 'animal model'/de OR 'animal tissue'/de OR 'meta analysis'/de OR 'practice guideline'/de OR 'systematic review'/de)	825
6.	#4 NOT ('animal cell'/de OR 'animal experiment'/de OR 'animal model'/de OR 'animal tissue'/de OR 'meta analysis'/de OR 'practice guideline'/de OR 'systematic review'/de) AND [1-4-2020]/sd NOT [1-8-2020]/sd	749

*Searches for human or excluding nonhuman or animal studies were inconsistently indexed, so were abandoned as a strategy

Supplementary Table 2 QUIPS table for risk of bias

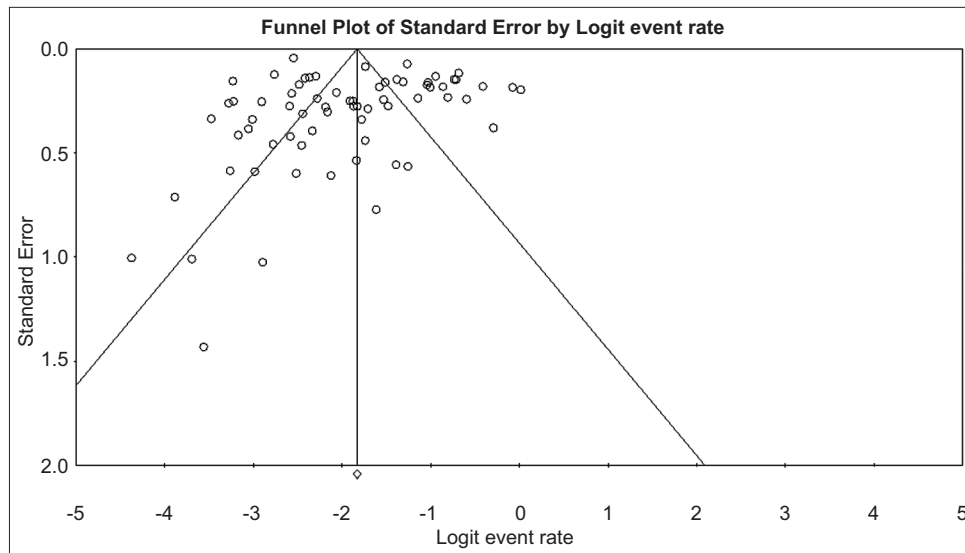
Study, year	Participation (The study sample represents population of interest on key characteristics?)	Attrition (The proportion of study sample providing outcome data is adequate?)	Prognostic factor measurement (Prognostic factor is adequately measured in study subjects?)	Outcome measurement (The outcome of interest is adequately measured in study subjects?)	Study confounders (Potential confounders are accounted for?)	Statistical analysis? (Statistical analysis appropriately designed for the study?)
Guan, 2020 [1]	Yes	Yes	Yes	Yes	Partly	Yes
Wang, 2020 [9]	Yes	Yes	Yes	Yes	No	Yes
Huang, 2020 [10]	Yes	Partly	Yes	Yes	Partly	Yes
Chen, 2020 [11]	Yes	Yes	No	Yes	No	Yes
Chen, 2020 [3]	Yes	Yes	Yes	Yes	Partly	Yes
Liu, 2020 [12]	Yes	Yes	Yes	Yes	No	Yes
Liu, 2020 [13]	Yes	Yes	No	Yes	No	Yes
Wu, 2020 [14]	Yes	Yes	No	Yes	Partly	Yes
Wu, 2020 [15]	Yes	Partly	No	Yes	Partly	Yes
Xu, 2020 [16]	Yes	Yes	No	Yes	Partly	Yes
Luo, 2020 [17]	Yes	Yes	No	Yes	No	Partly
Chen, 2020 [18]	Yes	Yes	Yes	Yes	No	Yes
Lei, 2020 [19]	Yes	Partly	No	Yes	No	Partly
Jin, 2020 [20]	Yes	Yes	No	Yes	Partly	Yes
Mo, 2020 [21]	Yes	Yes	Yes	Yes	No	Yes
Wan, 2020 [22]	Yes	Yes	Yes	Yes	No	Yes
Xiao, 2020 [23]	Yes	Yes	No	Yes	No	Partly
Yao, 2020 [24]	Yes	Yes	No	Yes	No	Yes
Young, 2020 [25]	Yes	Yes	No	Yes	No	Partly
Zhang, 2020 [26]	Yes	Yes	Yes	Yes	No	Yes
Zhang, 2020 [27]	Yes	Yes	Yes	Yes	No	Yes
Zhang, 2020 [28]	Yes	Yes	No	Yes	No	Yes
Zhou, 2020 [29]	Yes	Yes	No	Yes	No	Yes
Zhao, 2020 [30]	Yes	Partly	No	Yes	No	Partly
Shi, 2020 [31]	Yes	Yes	No	Yes	No	Yes
Liu, 2020 [32]	Yes	Yes	Yes	Yes	Partly	Yes
Liu, 2020 [33]	Yes	Yes	Yes	Yes	No	Partly
Liu, 2020 [34]	Yes	Yes	Yes	Yes	No	Yes
Zhang, 2020 [35]	Yes	Yes	Yes	Yes	Partly	Yes
Zhou, 2020 [36]	Yes	Partly	No	Yes	No	Yes
Han, 2020 [37]	Yes	Yes	No	Yes	No	Partly
Peng, 2020 [38]	Yes	Yes	Yes	Yes	No	Partly
Shi, 2020 [39]	Yes	Partly	No	Yes	Partly	Yes
Wang, 2020 [40]	Yes	Yes	Yes	Yes	No	Yes
Xie, 2020 [41]	Yes	Yes	Yes	Yes	Partly	Yes
Cai, 2020 [42]	Yes	Yes	Yes	Yes	No	Yes
Gao, 2020 [43]	Yes	Yes	Yes	Yes	No	Yes
Zhou, 2020 [44]	Yes	Yes	Yes	Yes	Partly	Yes
Bonetti, 2020 [45]	Yes	Partly	Yes	Yes	Partly	Yes
Buscarini, 2020 [46]	Yes	Yes	No	Yes	No	Partly
Cai, 2020 [47]	Yes	Yes	Yes	Yes	Yes	Yes
Chen, 2020 [48]	Yes	Yes	Yes	Yes	Partly	Yes

(Contd...)

Supplementary Table 2 (Continued)

Study, year	Participation (The study sample represents population of interest on key characteristics?)	Attrition (The proportion of study sample providing outcome data is adequate?)	Prognostic factor measurement (Prognostic factor is adequately measured in study subjects?)	Outcome measurement (The outcome of interest is adequately measured in study subjects?)	Study confounders (Potential confounders are accounted for?)	Statistical analysis? (Statistical analysis appropriately designed for the study?)
Chen, 2020 [49]	Yes	Yes	No	Partly	No	Yes
Cholankeril, 2020 [50]	Yes	Yes	No	Yes	No	Partly
Diaz, 2020 [51]	Yes	Yes	No	Yes	No	No
Duan, 2020 [52]	Yes	Yes	Yes	Yes	No	Yes
Fan, 2020 [53]	Yes	Yes	Partly	Yes	No	Yes
Hajifathalian, 2020 [54]	Yes	Yes	No	Yes	No	Partly
Han, 2020 [55]	Yes	Yes	No	Yes	No	Yes
He, 2020 [56]	Yes	Yes	Yes	Yes	No	Yes
Hong, 2020 [57]	Yes	Yes	Yes	Yes	No	Yes
Kaafarani, 2020 [58]	Yes	Yes	No	Yes	No	No
Kim, 2020 [59]	Partly	Yes	No	Yes	No	Partly
Klopfenstein, 2020 [60]	Yes	Yes	No	Yes	No	No
Kluytmans-van den Bergh, 2020 [61]	Yes	Yes	No	Yes	No	Yes
Lian, 2020 [62]	Yes	Yes	No	Yes	No	Yes
Lin, 2020 [63]	Yes	Yes	No	Yes	No	Yes
Liu, 2020 [64]	Yes	Yes	No	Yes	No	Yes
Liu, 2020 [65]	Yes	Yes	No	Yes	No	Yes
Meng, 2020 [66]	Partly	Yes	No	Yes	Yes	Yes
Nobel, 2020 [67]	Yes	Yes	No	Yes	No	Yes
Palaiodimos, 2020 [68]	Yes	Yes	No	Yes	Yes	Yes
Pan, 2020 [69]	Yes	Yes	Yes	Yes	No	Yes
Phipps, 2020 [70]	Yes	Yes	No	Yes	No	Partly
Redd, 2020 [71]	Yes	Yes	No	Yes	Yes	Yes
Remes-Troche, 2020 [72]	Yes	Yes	No	Yes	No	No
Shang, 2020 [73]	Yes	Yes	No	Yes	No	Yes
Sun, 2020 [74]	Yes	Yes	Yes	Yes	No	Yes
Wan, 2020 [75]	Yes	Yes	No	Yes	Partly	No
Wang, 2020 [76]	Yes	Yes	Yes	Yes	No	Yes
Wang, 2020 [77]	Partly	Yes	Yes	Yes	No	Partly
Wang, 2020 [78]	Yes	Yes	Yes	Yes	No	Yes
Wang, 2020 [79]	Yes	Yes	Yes	Yes	Yes	Yes
Wang, 2020 [80]	Yes	Yes	Yes	Yes	No	Partly
Wei, 2020 [81]	Yes	Yes	No	Yes	No	Yes
Yan, 2020 [82]	Yes	No	No	Yes	No	Yes
Yang, 2020 [83]	Yes	Yes	Yes	Yes	No	Yes
Zhang, 2020 [84]	Yes	Yes	Yes	Yes	No	Yes
Zhang, 2020 [85]	Yes	Yes	Yes	Yes	No	Yes
Zhang, 2020 [86]	Yes	Yes	Yes	Yes	No	Yes
Zhao, 2020 [87]	Yes	Yes	Yes	Yes	No	Yes
Zheng, 2020 [88]	Yes	Yes	Yes	Yes	No	Yes
Zhou, 2020 [89]	Yes	Yes	No	Yes	No	Yes

Yes: study accounted for the variable, No: Study did not account for the variable, Partly: Study accounted somewhat for the variable



Supplementary Figure 1 Funnel plot signifying visible asymmetry based on diarrhea for COVID-19 patients

PRISMA CHECKLIST

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	4
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	5
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	5
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	NA
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	6
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	6
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	6, Supplementary Table 1
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	6
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	6, 7
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	6

(Contd...)

PRISMA CHECKLIST (*Continued*)

Section/topic	#	Checklist item	Reported on page #
TITLE			
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	7
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	6, 7
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., <i>I</i> ²) for each meta-analysis.	6, 7
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	7
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	6, 7
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	8
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	8
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	12, Supplementary Table 2
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Table 2
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	8 - 12
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	12
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	8 - 12
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	13
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	14
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	15
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	1

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 2009;6:e1000097.