Supplementary Material

Table S1.

Search strategy
PUBMED
("sars cov 2"[MeSH Terms] OR "sars cov 2"[All Fields] OR "covid"[All Fields] OR "covid 19"[MeSH Terms] OR "covid 19"[All Fields] OR ("sars cov 2"[MeSH Terms] OR "sars cov 2"[All Fields] OR "sars cov 2"[All Fields]) OR ("covid 19"[MeSH Terms] OR "covid 19"[All Fields] OR "coronavirus disease 2019"[All Fields]) OR ("sars cov 2"[MeSH Terms] OR "sars cov 2"[All Fields] OR "ncov"[All Fields])) AND ("reinfect"[All Fields] OR "reinfecting"[All Fields] OR "reinfection"[MeSH Terms] OR "reinfection"[All Fields] OR "reinfected"[All Fields] OR "reinfections"[All Fields] OR "reinfects"[All Fields] OR ("latent infection"[MeSH Terms] OR ("latent"[All Fields] AND "infection"[All Fields]) OR "latent infection"[All Fields] OR ("reactivated"[All Fields] AND "infection"[All Fields]) OR "reactivated infection"[All Fields]) OR (("second"[All Fields] OR "seconds"[All Fields]) AND ("episode"[All Fields] OR "episodes"[All Fields] OR "episodic"[All Fields] OR "episodically"[All Fields])))
SCOPUS
TITLE-ABS-KEY (coronavir* OR "corona virus" OR "corona pandemic" OR betacoronavir* OR covid19 OR covid OR ncov OR"CoV2"OR coV2 OR sarscoV2 OR sarS2 OR 2019ncov OR "novel CoV") OR TITLE-ABS-KEY(sars AND cov) AND (TITLE-ABS-KEY("severe acute respiratory" OR pneumonia* OR infection OR "respiratory infectious disease")) AND (TITLE-ABS-KEY(reinfection*OR "secondary infection")) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020)) AND(LIMIT-TO(DOCTYPE , "ar"))

Table S2. JBI assessment results of studies

Country	Publication date	Author	1. Were the criteria for inclusion in the sample clearly defined?	2. Were the study subjects and the setting described in detail?	3. Was the exposure measured in a valid and reliable way?	4. Were objective, standard criteria used for measurement of the condition?	5. Were confounding factors identified?	6. Were strategies to deal with confounding factors stated?	7. Were the outcomes measured in a valid and reliable way?	8. Was appropriate statistical analysis used?	Total
Italy	May-22	Sacco C, Petrone D, Del Manso M, et al. [24]	1	0	1	1	1	0	1	1	**6**
Italy	May-22	Flacco ME, Soldato G, Acuti Martellucci C, et al.[25]	1	0	1	1	1	1	1	0	**6**

Saudi Arabia	April 2022	Shaheen NA, Sambas R, Alenezi M, Alharbi NK, Aldibasi O, Bosaeed M [26]	1	1	1	1	1	0	1	1	**7**
Sweden	April 2022	Nordström P, Ballin M, Nordström A [27]	1	0	1	1	1	0	1	1	**6**
USA	August 2021	Slezak J, Bruxvoort K, Fischer H, Broder B, Ackerson B, Tartof S [28]	1	0	1	1	1	1	1	1	**7**
England	April 2022	Mensah AA, Lacy J, Stowe J, et al.[29]	1	1	1	1	1	1	1	1	**8**
China	December 2020	Yao MQ, Zheng QX, Xu J, et al. [30]	1	0	1	1	1	1	1	0	**6**

South Africa	March 2022	Pulliam JRC, van Schalkwyk C, Govender N, et al. [31]	1	1	1	1	1	1	1	1	**8**
Bahrain (Middle East)	August 2022	Almadhi M, Alsayyad AS, Conroy R, Atkin S, Awadhi AA, Al-Tawfiq JA, AlQahtani M [3]	1	0	1	1	0	0	1	1	**5**
Saudi Arabia	July 2022	Al-Otaiby M, et al.[32]	1	1	1	1	1	1	1	1	**8**
Mexico	April 2021	Murillo-Zamora E, Mendoza-Cano O, Delgado-Enciso I, Hernandez-Suarez CM [33]	1	1	1	1	0	1	1	1	**7**

Spain	January 2022	Sánchez-Varela N, Cinza-Sanjurjo S, Portela-Romero M [35]	1	1	1	1	0	0	1	1	**6**
China	May-20	Hu R, Jiang Z, Gao H, et al. [36]	1	0	1	1	1	1	1	0	**6**
Republic of Cyprus	March 2022	Quattrocchi A, Tsioutis C, Demetriou A, et al. [37]	1	1	1	1	0	1	1	1	**7**
USA	August 2021	Cavanaugh AM, Spicer KB, Thoroughman D, Glick C, Winter K[38]	1	1	1	1	1	0	1	1	**7**

Serbia	July 2022	Medić S, Anastassopoulou C, Lozanov-Crvenković Z, et al. [39]	1	1	1	1	0	1	1	1	**7**
Austria	February 2021	Pilz S, Chakeri A, Ioannidis JP, et al. [40]	1	1	1	1	1	1	1	0	**7**
Brazil	February 2021	Adrielle Dos Santos L, Filho PGG, Silva AMF, et al. [41]	1	1	1	1	0	1	1	1	**7**
Sweden	January 2020	Havervall S, Ng H, Jernbom Falk A, et al.[42]	1	0	1	1	1	0	1	0	**5**

India	January 2022	Nisha B, Dakshinamoorthy K, Padmanaban P, Jain T, Neelavarnan M.[43]	1	1	1	1	0	1	1	1	**7**
USA	May-22	Levin-Rector A, Firestein L, McGibbon E, et al. [44]	1	1	1	1	1	0	1	1	**7**
Several countries	August 2021	Sotoodeh Ghorbani S, Taherpour N, Bayat S, Ghajari H, Mohseni P, Hashemi Nazari SS [8]	1	0	1	1	0	1	1	1	**6**

France	March 2022	Nguyen NN, Houhamdi L, Hoang VT, et al. [45]	1	1	1	1	0	1	1	1	**7**
England	March 2022	Mensah AA, Campbell H, Stowe J, et al.[46]	1	0	1	1	1	1	1	0	**6**
Mexico	June 2022	Ochoa-Hein E, Leal-Morán PE, Nava-Guzmán KA, et al.[47]	1	1	1	1	0	0	1	1	**6**

Table S2: Newcastle–Ottawa Scale (NOS) Risk of Bias Assessment Results

Study ID	Selection			Comparability*	Outcome		Total (7★)
	Representativeness of exposed cohort (★)	Selection of non-exposed cohort (★)	Ascertainment of exposure (★)	(★★)	Assessment of outcome (★)	Adequacy of follow up (★)	
Sacco C, Petrone D, Del Manso M, et al. [24]	*	*	-	★ ★	*	-	★ ★ ★ ★ ★ (5)
Flacco ME, Soldato G, Acuti Martellucci C, et al.[25]	*	*	-	★ ★	*	*	★ ★ ★ ★ ★ ★ (6)
Shaheen NA, Sambas R, Alenezi M, Alharbi NK, Aldibasi O, Bosaeed M[26]	-	*	*	★ ★	*	-	★ ★ ★ ★ ★ (5)
Nordström P, Ballin M, Nordström A[27]	*	*	-	* -	*	-	★ ★ ★ ★ (4)
Slezak J, Bruxvoort K, Fischer H, Broder B, Ackerson B,	*	*	-	★ ★	*	-	★ ★ ★ ★ ★ (5)

Tartof S [28]							
Mensah AA, Lacy J, Stowe J, et al.[29]	*	*	-	★ ★	*	*	★ ★ ★ ★ ★ ★ (6)
Yao MQ, Zheng QX, Xu J, et al.[30]	*	*	*	★ ★	*	-	★ ★ ★ ★ ★ ★ (6)
Pulliam JRC, van Schalkwyk C, Govender N, et al.[31]	-	*	*	★ ★	*	-	★ ★ ★ ★ ★ (5)
Almadhi M, Alsayyad AS, Conroy R, Atkin S, Awadhi AA, Al-Tawfiq JA, AlQahtani M [3]	*	*	*	- ★	*	-	★ ★ ★ ★ ★ (5)
Al-Otaiby M, et al.[32]	*	*	-	★ ★	*	*	★ ★ ★ ★ ★ ★ (6)
Murillo-Zamora E, Mendoza-Cano O, Delgado-Enciso I, Hernandez-Suarez CM [33]	*	*	-	★ ★	*	*	★ ★ ★ ★ ★ ★ (6)
Garduño-Orbe B, Sánchez-	*	*	-	★ ★	*	-	★ ★ ★ ★ ★ (5)

Rebolledo JM, Cortés-Rafael M, et al.[34]							
Sánchez-Varela N, Cinza-Sanjurjo S, Portela-Romero M [35]	*	*	-	★ ★	*	*	★ ★ ★ ★ ★ ★ (6)
Hu R, Jiang Z, Gao H, et al.[36]	-	*	*	★ ★	*	-	★ ★ ★ ★ ★ (5)
Quattrocchi A, Tsioutis C, Demetriou A, et al.[37]	*	*	-	★ ★	*	-	★ ★ ★ ★ ★ (5)
Cavanaugh AM, Spicer KB, Thoroughman D, Glick C, Winter K[38]	*	*	-	★ ★	*	-	★ ★ ★ ★ ★ (5)
Medić S, Anastassopoulou C, Lozanov-Crvenković Z, et al.[39]	*	*	-	* -	*	*	★ ★ ★ ★ ★ (5)
Pilz S, Chakeri A, Ioannidis JP, et al.[40]	*	*	*	★ ★	*	-	★ ★ ★ ★ ★ ★ (6)

Adrielle Dos Santos L, Filho PGG, Silva AMF, et al.[41]	-	*	*	★ ★	*	-	★ ★ ★ ★ ★ (5)
Havervall S, Ng H, Jernbom Falk A, et al.[42]	*	*	*	★ ★	*	-	★ ★ ★ ★ ★ ★ (6)
Nisha B, Dakshinamoorthy K, Padmanaban P, Jain T, Neelavarnan M.[43]	*	*	-	★ ★	*	*	★ ★ ★ ★ ★ ★ (6)
Levin-Rector A, Firestein L, McGibbon E, et al.[44]	*	*	-	- ★	*	*	★ ★ ★ ★ ★ (5)
Sotoodeh Ghorbani S, Taherpour N, Bayat S, Ghajari H, Mohseni P, Hashemi Nazari SS[8]	*	*	-	★ ★	*	-	★ ★ ★ ★ ★ (5)
Nguyen NN, Houhamdi L,	*	*	-	★ ★	*	*	★ ★ ★ ★ ★ ★ (6)

Hoang VT, et al.[45]							
Mensah AA, Campbell H, Stowe J, et al.[46]	-	*	*	★ ★	*	-	★ ★ ★ ★ ★ (5)
Ochoa-Hein E, Leal-Morán PE, Nava-Guzmán KA, et al.[47]	*	*	-	★ ★	*	-	★ ★ ★ ★ ★ (5)
Jang EJ, Choe YJ, Yun GW, et al.[48]	*	*	-	★ ★	*	-	★ ★ ★ ★ ★ (5)