

SUPPLEMENTARY INFORMATION

Asthma and Coronavirus Disease 2019 Risk: A systematic review and meta-analysis

Table S1. Summary of Prevalence and Risk for COVID-19 among asthmatics in previous systematic reviews and meta-analyses

Study	Period	Sample Size	Prevalence [#] % (95% CI)	Risk Ratio except where stated (95% CI)					
				Acquiring	Hospital	ICU	MV	ICU + MV	Death
Broadhurst et al[1]	To 7 May 2020	30,496	6.8 (3.7–10.7)						
Sunjaya et al[2]	To 26 May 2020	587,280	7.46% (6.25–8.67)	0.86 (0.80–0.94; p < 0.0001)	0.87 (0.77–0.99, p = 0.03)	1.19 (0.93–1.53, p=0.16)	1.16 (0.83–1.63, p=0.39)	0.87 (0.94–1.37, p = 0.19)	0.87 (0.68–1.10, p = 0.25)
Mendes et al[3]	To June 2020	161,271	1.6%						
Hussein et al[4]	To 15 July 2020	107,983	11.2% (9.1%–13.3%) (Only hospital studies)		0.94 (0.84–1.04, p=0.074)	1.64 (0.67–3.97, p=0.27)	1.27 (95%CI = 1.02–1.58, p=0.030)		0.80 (0.65–0.97, p=0.026)
Liu et al[5]	To 18 August 2020	410,382	1.1% to 16.9%		1.15; 95% CI, 0.92–1.43, P = 0.19	1.19; 95% CI, 0.92–1.54, 0.17	0.91; 95% CI, 0.71–1.17; P = 0.42		0.90; 95% CI, 0.73–1.11; p = 0.31
Wang et al[6]	To 1 Sept 2020	32,187						Severe COVID-19 OR = 1.09, 95% CI: 0.79– 1.51, P = .61	OR = 0.84, 95% CI: 0.58– 1.23, P = .37
Shi et al[7]	To 20 Sept 2020	403,392	8.3% (95% CI 7.6–9.0%)					Combined with death 0.91 (0.78–1.06, P < 0.001)	0.80 (0.74–0.86, p=0.13)
Terry et al[8]	To Dec 2020	878,239 (hospitalized, severe and	10.0% (95% CI, 8.0–12.2%)		1.06 (0.94–1.19); P=			1.18 (0.98–1.42); P=	0.89 (0.77–1.02); P= 0.09

		mortality groups combined)	(Hospitalised) 9.5% (95% CI, 8.0–11.0%) (In community)		0.37			0.07	
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*ICU – Intensive Care Unit; MV – Mechanical Ventilation

#Prevalence among COVID-19 positive cases

Table S2. Study Quality Assessment

Study	Selection Bias	Comparability	Exposure	Total Score	Quality
Ahlstrom et al[9]	4	2	3	9	High
Almazeedi et al[10]	4	2	3	9	High
Arslan et al[11]	3	2	3	8	High
Ashinyo et al[12]	3	1	3	7	High
Aveyard et al[13]	3	2	3	8	High
Baumer et al[14]	3	2	3	8	High
Bergman et al[15]	4	2	3	9	High
Beurnier et al[16]	4	2	3	9	High
Calmes et al[17]	4	2	3	9	High
Castilla et al[18]	4	2	3	9	High
Chhiba et al[19]	4	2	3	9	High
Choi et al[20]	4	2	3	9	High
Dennis et al[21]	4	2	3	9	High
Eggert et al[22]	4	2	3	9	High
Emami et al[23]	3	2	3	7	High
Ferastraoaru et al[24]	4	2	3	9	High
Fong et al[25]	4	2	3	9	High
Garcia-Pachon et al[26]	3	2	3	8	High
Green et al[27]	4	2	3	9	High
Guan et al[28]	4	2	3	9	High
Gude-Sampedro et al[29]	4	2	3	9	High
Gupta et al[30]	3	1	2	6	Medium
Hansen et al[31]	4	2	3	9	High
Ho et al[32]	4	2	3	9	High
Je et al[33]	3	1	3	7	High
Kim et al[34]	4	2	3	9	High
Kipourou et al[35]	4	2	3	9	High

Lee et al[36]	4	2	3	9	High
Lemus Calderon et al[37]	4	2	3	9	High
Liao et al[38]	4	2	3	9	High
Lieberman-Cribbin et al[39]	4	1	3	8	High
Lombardi et al[40]	4	2	3	9	High
Louie et al[41]	3	2	3	8	High
Lovinsky-Desir et al[42]	4	2	3	9	High
Martos-Benitez et al[43]	4	2	3	9	High
Mash et al[44]	4	1	3	8	High
Mather et al[45]	3	1	3	7	High
Murillo-Zamora et al[46]	4	2	3	9	High
Nystad et al[47]	4	0	3	7	High
Patone et al[48]	4	2	3	9	High
Robinson et al[49]	4	2	3	8	High
Rosenthal et al[50]	4	2	3	8	High
Salacup et al[51]	3	2	3	8	High
Schonfeld et al[52]	4	2	3	9	High
Shah et al[53]	3	2	3	8	High
Tutiya et al[54]	3	1	3	7	High
Valverde-Monge et al[55]	4	2	3	9	High
Wang et al[56]	3	2	3	8	High
Yang et al[57]	4	2	3	9	High
Yordanov et al[58]	2	1	3	6	Medium
Zhang et al[59]	3	2	3	8	High

Table S3- Assessment of Publication Bias

Outcomes	Egger Test (P-value)
Proportion of COVID-19 among asthmatics	<0.0001
Risk of acquiring COVID-19	0.9730
Risk of hospitalisation from COVID-19	0.0199
Risk of requiring admission to ICU	0.6228
Risk of requiring admission to ICU then mechanical ventilation	0.2702
Risk of mortality	0.2835

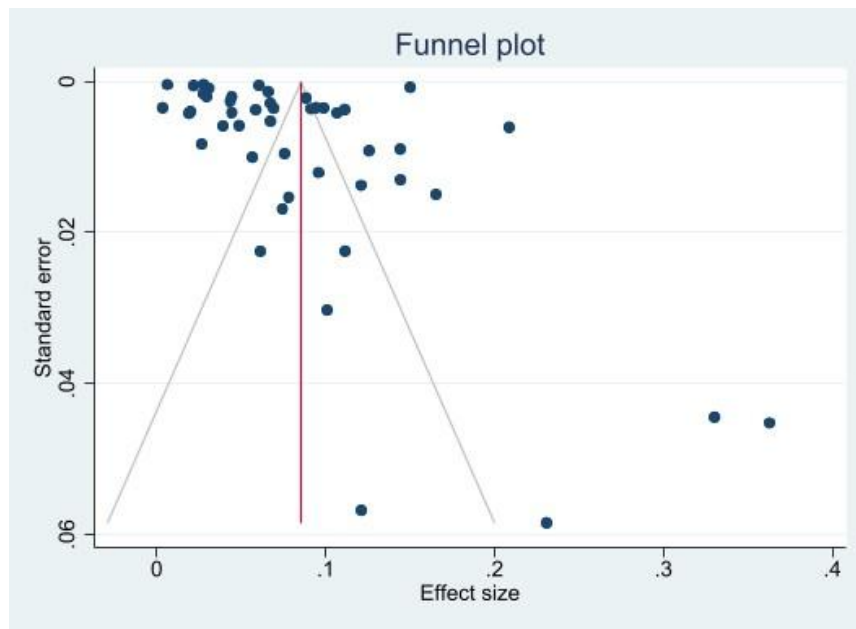


Figure S1. Proportion of COVID-19 among asthmatics

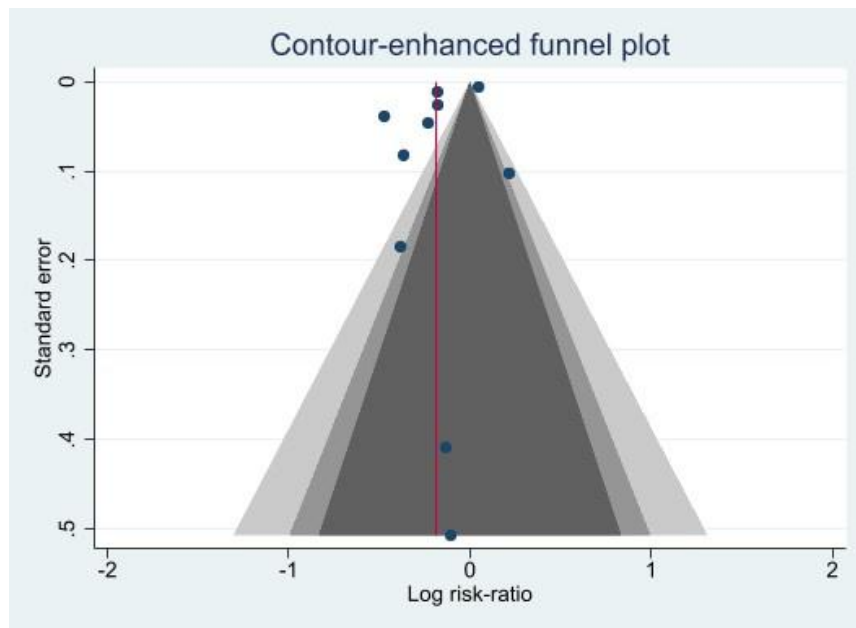


Figure S2. Risk of acquiring COVID-19

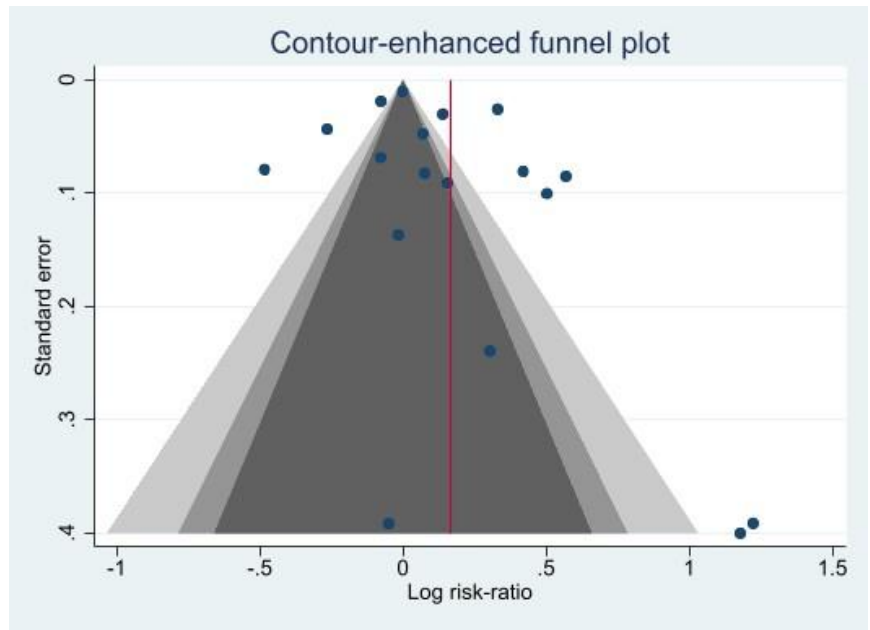


Figure S3. Risk of hospitalisation from COVID-19

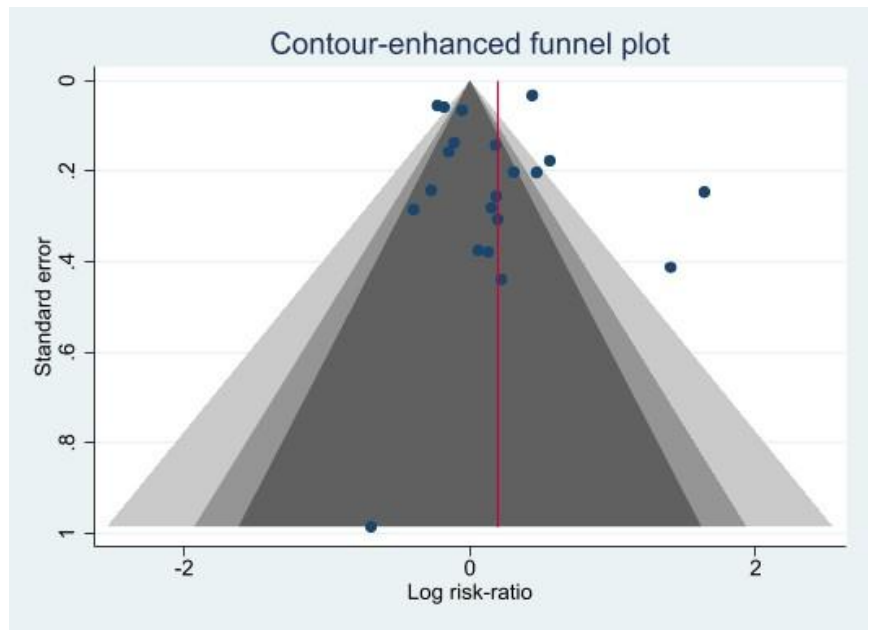


Figure S4. Risk of requiring admission to ICU

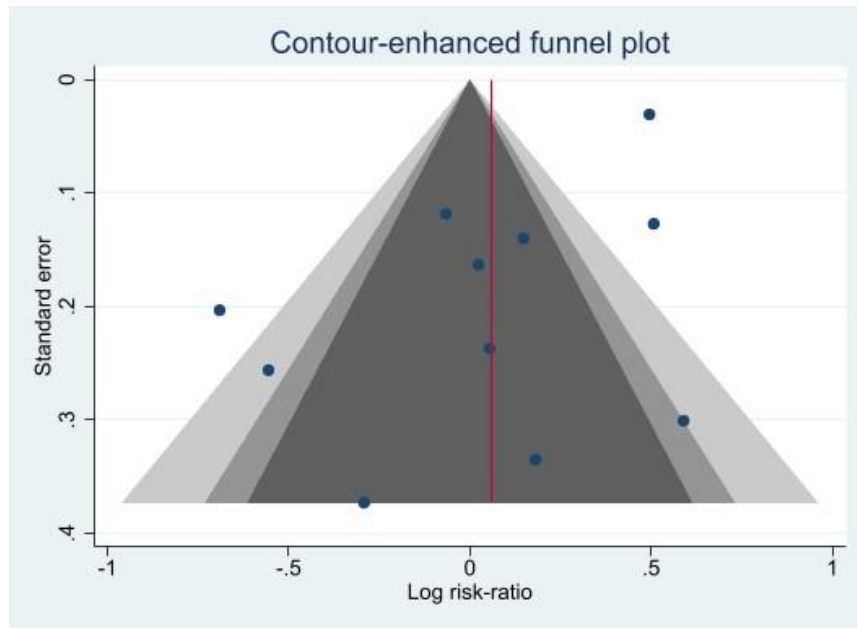


Figure S5. Risk of requiring admission to ICU then mechanical ventilation

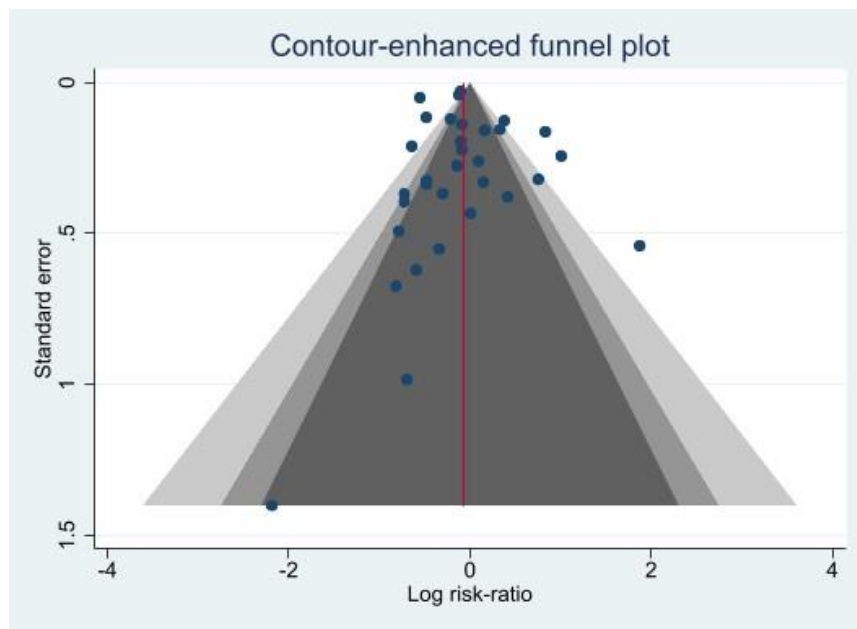


Figure S6. Risk of mortality

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