

Figure S1. Funnel plots for meta-analysis regarding the prevalence of COVID-19 in patients with autoimmune diseases

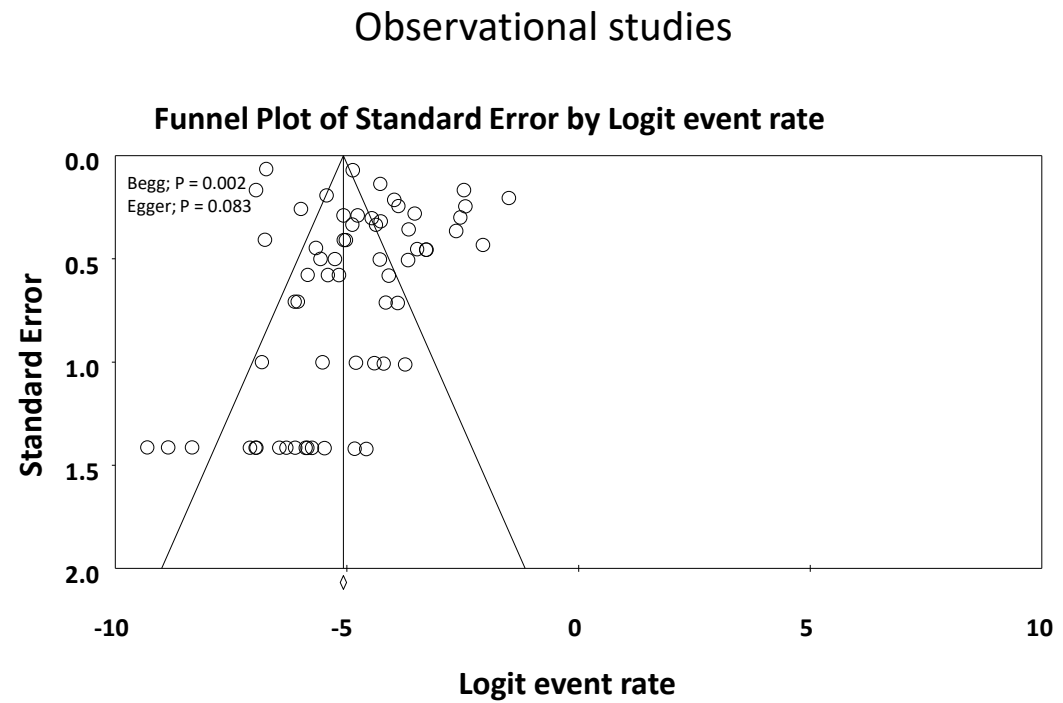
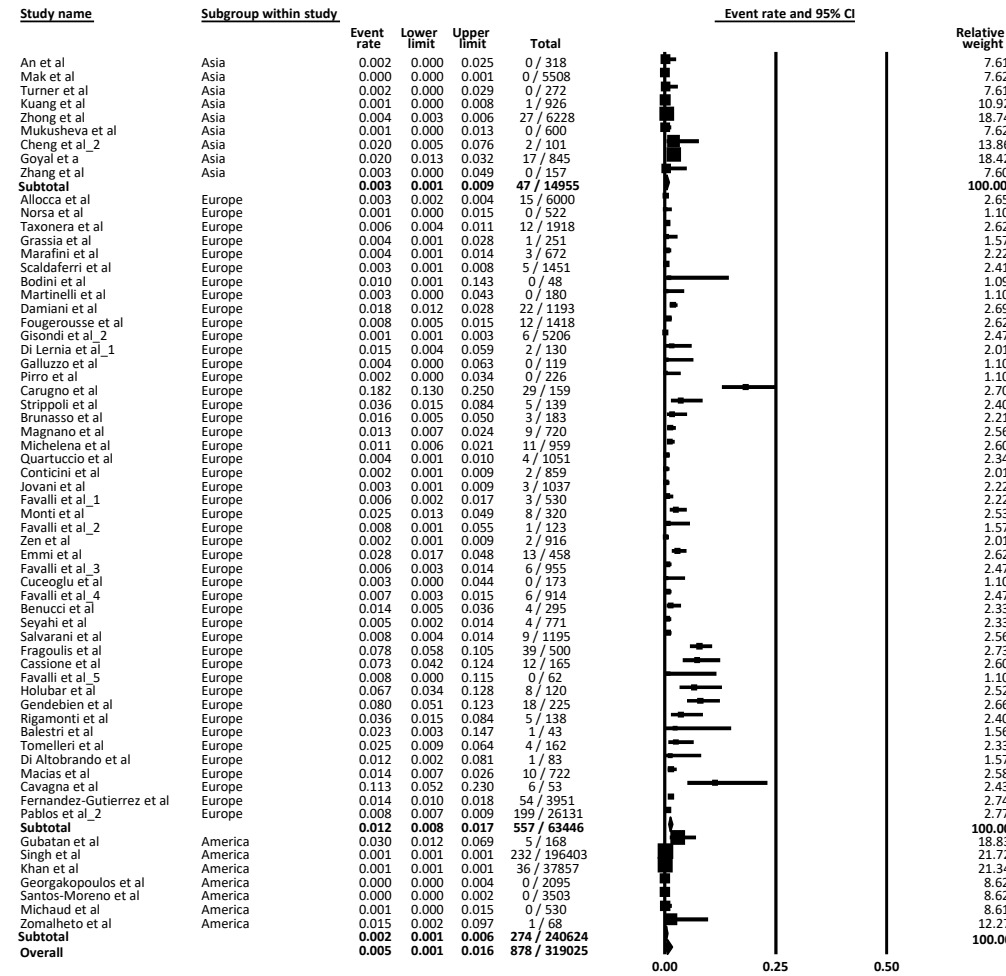


Figure S2. Meta-analysis regarding the prevalence of COVID-19 in patients with autoimmune diseases (by country)



Asia;  $P < 0.001$ , Heterogeneity:  $I^2 = 82.2\%$ ,  $Q = 45.1$ ,  $P < 0.001$   
 Europe;  $P < 0.001$ , Heterogeneity:  $I^2 = 93.5\%$ ,  $Q = 687.3$ ,  $P < 0.001$   
 America;  $P < 0.001$ , Heterogeneity:  $I^2 = 90.4\%$ ,  $Q = 62.7$ ,  $P < 0.001$   
 Overall;  $P < 0.001$ , Heterogeneity:  $I^2 = 96.8\%$ ,  $Q = 1888.7$ ,  $P < 0.001$

Figure S3. Funnel plots for meta-analysis regarding the prevalence of COVID-19 in patients with autoimmune diseases

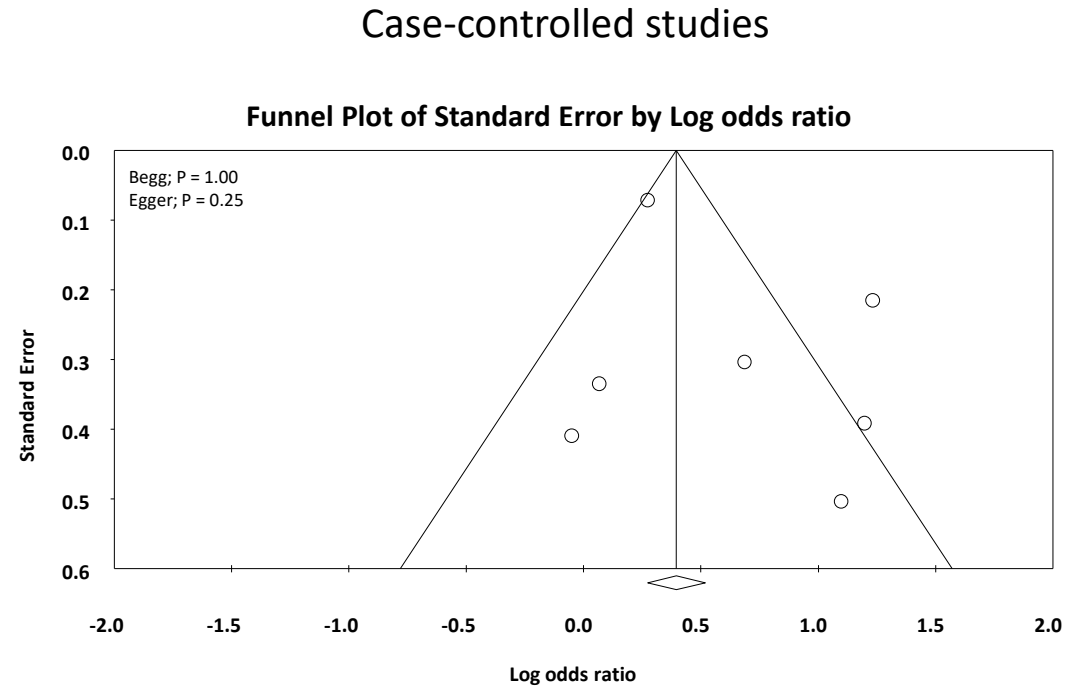
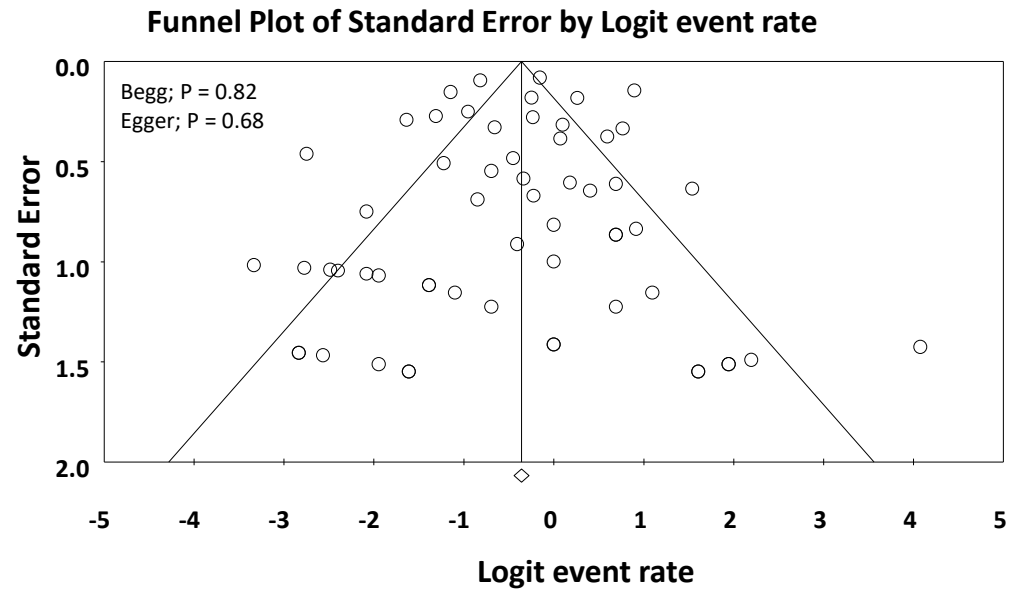


Figure S4. Funnel plots for meta-analysis regarding clinical outcomes of COVID-19 in patients with autoimmune diseases (Observational studies)

## (A) Hospitalization



## (B) Death

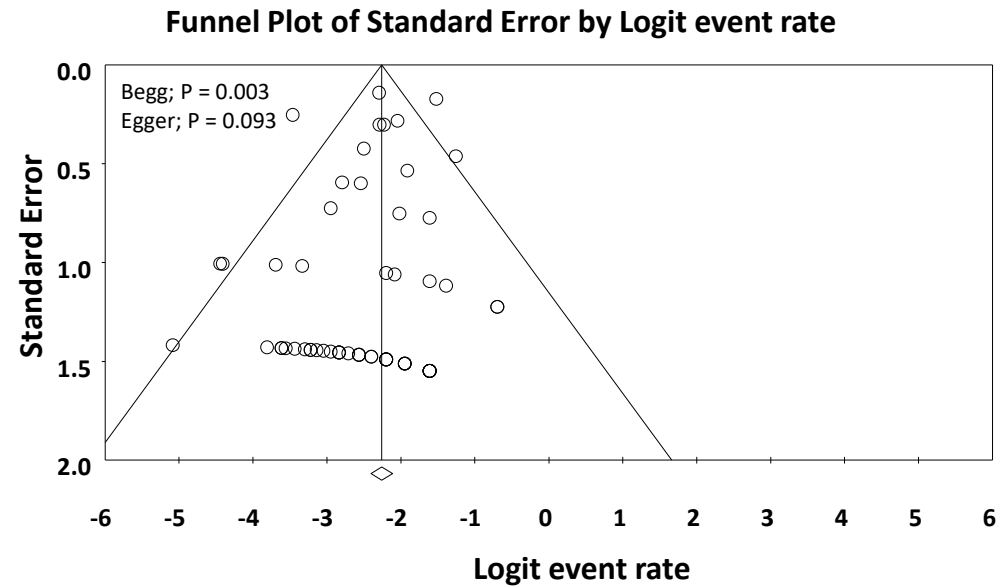
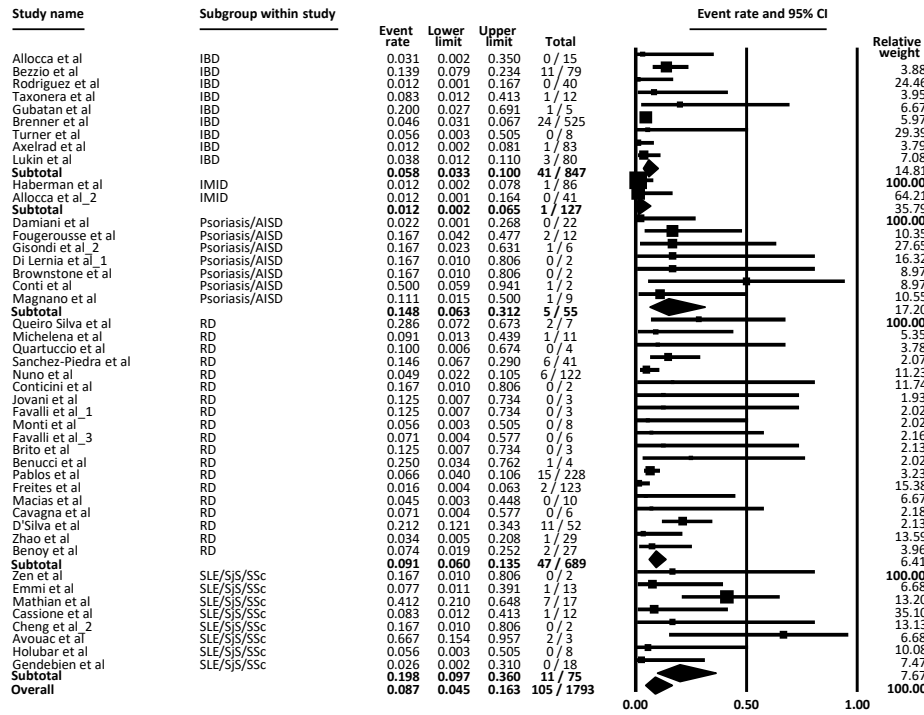


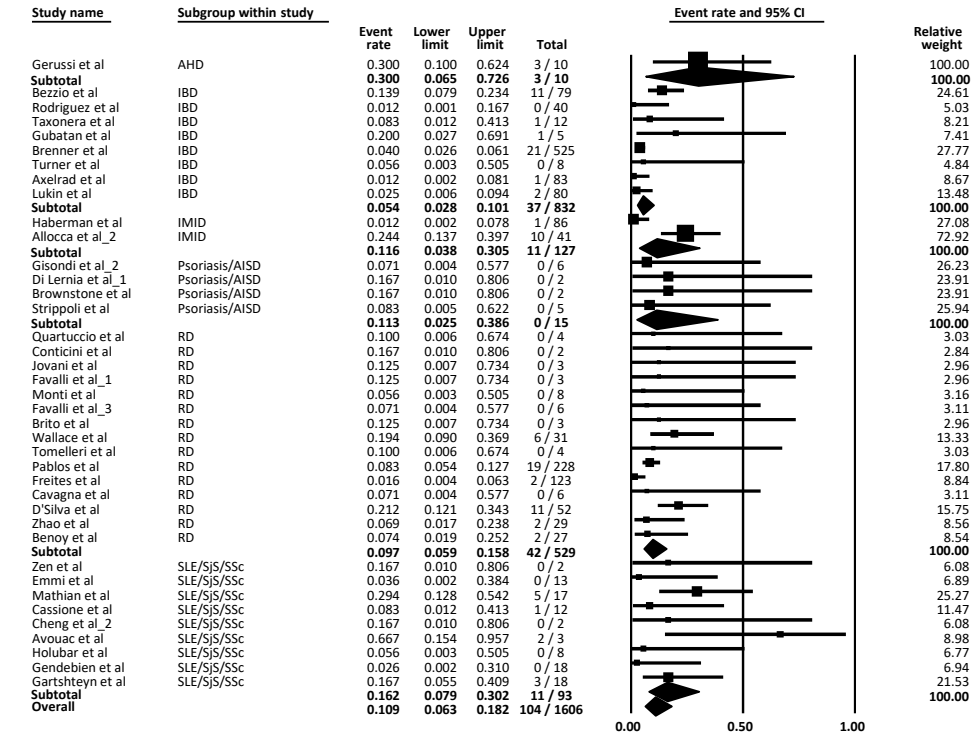
Figure S5. Meta-analysis regarding severe COVID-19 in patients with autoimmune diseases (observational studies)

(A) ICU admission



IBD;  $P < 0.001$ , Heterogeneity:  $I^2 = 51.9\%$ ,  $Q = 16.6$ ,  $P = 0.034$   
 IMID (Immune-mediated inflammatory disease);  $P < 0.001$ , Heterogeneity:  $I^2 = 0\%$ ,  $Q = 0.00$ ,  $P = 0.989$   
 Psoriasis/AISD (Autoimmune skin disease);  $P < 0.001$ , Heterogeneity:  $I^2 = 0\%$ ,  $Q = 3.76$ ,  $P = 0.709$   
 RD;  $P < 0.001$ , Heterogeneity:  $I^2 = 31.5\%$ ,  $Q = 26.3$ ,  $P = 0.093$   
 SLE/SjS/SSc;  $P < 0.001$ , Heterogeneity:  $I^2 = 43.5\%$ ,  $Q = 12.4$ ,  $P = 0.089$   
 Overall:  $P < 0.001$ , Heterogeneity:  $I^2 = 48.7\%$ ,  $Q = 85.8$ ,  $P < 0.001$

(B) Mechanical/non-invasive ventilation



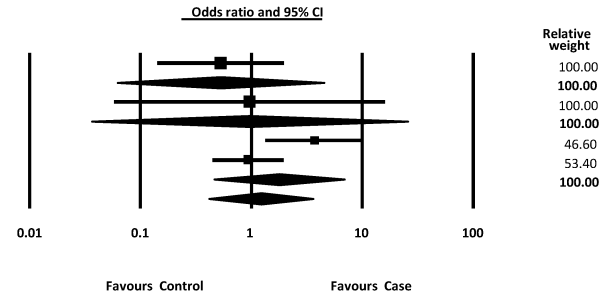
AHD (Autoimmune hepatic disease);  $P = 0.362$ , Heterogeneity:  $I^2 = 0\%$ ,  $Q = 0.00$ ,  $P = 1.000$   
 IBD;  $P < 0.001$ , Heterogeneity:  $I^2 = 63.0\%$ ,  $Q = 18.9$ ,  $P = 0.008$   
 IMID (Immune-mediated inflammatory disease);  $P = 0.001$ , Heterogeneity:  $I^2 = 89.6\%$ ,  $Q = 9.58$ ,  $P = 0.002$   
 Psoriasis/AISD (Autoimmune skin disease);  $P = 0.011$ , Heterogeneity:  $I^2 = 0\%$ ,  $Q = 0.34$ ,  $P = 0.952$   
 RD;  $P < 0.001$ , Heterogeneity:  $I^2 = 23.6\%$ ,  $Q = 18.3$ ,  $P = 0.192$   
 SLE/SjS/SSc;  $P < 0.001$ , Heterogeneity:  $I^2 = 19.4\%$ ,  $Q = 9.93$ ,  $P = 0.270$   
 Overall:  $P < 0.001$ , Heterogeneity:  $I^2 = 54.6\%$ ,  $Q = 83.7$ ,  $P < 0.001$

Figure S6. Clinical outcomes of COVID-19 in patients with autoimmune diseases (case-controlled studies)

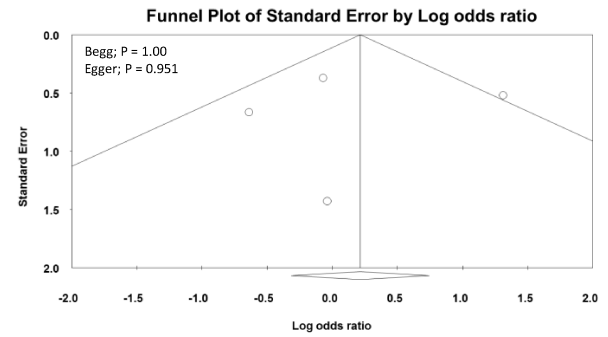
(A) Meta-analysis (ICU admission)

Study name	Subgroup within study	Odds ratio		ICU / Total		
		Lower limit	Upper limit	Cases	Control	
Lukin et al	IBD	0.528	0.143	1.948	3 / 80	11 / 160
<b>Subtotal</b>		<b>0.528</b>	<b>0.062</b>	<b>4.501</b>	<b>3 / 80</b>	<b>11 / 160</b>
Damiani et al	Psoriasis	0.963	0.058	15.878	0 / 22	1236 / 54801
<b>Subtotal</b>		<b>0.963</b>	<b>0.036</b>	<b>25.533</b>	<b>0 / 22</b>	<b>1236 / 54801</b>
D'Silva et al	RD	3.718	1.347	10.264	11 / 52	7 / 104
Pablos et al	RD	0.933	0.450	1.936	15 / 228	16 / 228
<b>Subtotal</b>		<b>1.777</b>	<b>0.460</b>	<b>6.866</b>	<b>26 / 280</b>	<b>23 / 332</b>
<b>Overall</b>		<b>1.222</b>	<b>0.415</b>	<b>3.597</b>	<b>29 / 382</b>	<b>1270 / 55293</b>

IBD;  $P = 0.559$ , Heterogeneity:  $I^2 = 0\%$ ,  $Q = 0.00$ ,  $P = 1.000$   
 Psoriasis;  $P = 0.982$ , Heterogeneity:  $I^2 = 0\%$ ,  $Q = 0.00$ ,  $P = 1.000$   
 RD;  $P = 0.404$ , Heterogeneity:  $I^2 = 78.7\%$ ,  $Q = 4.70$ ,  $P = 0.030$   
 Overall:  $P = 0.716$ , Heterogeneity:  $I^2 = 55.6\%$ ,  $Q = 6.75$ ,  $P = 0.080$



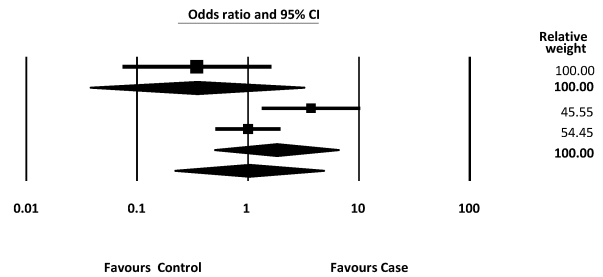
(C) Funnel plot (ICU admission)



(B) Meta-analysis (Mechanical/non-invasive ventilation)

Study name	Subgroup within study	Odds ratio		Ventilation / Total		
		Lower limit	Upper limit	Case	Control	
Lukin et al	IBD	0.347	0.075	1.606	2 / 80	11 / 160
<b>Subtotal</b>		<b>0.347</b>	<b>0.038</b>	<b>3.192</b>	<b>2 / 80</b>	<b>11 / 160</b>
D'Silva et al	RD	3.718	1.347	10.264	11 / 52	7 / 104
Pablos et al	RD	1.000	0.515	1.943	19 / 228	19 / 228
<b>Subtotal</b>		<b>1.819</b>	<b>0.505</b>	<b>6.552</b>	<b>30 / 280</b>	<b>26 / 332</b>
<b>Overall</b>		<b>1.028</b>	<b>0.220</b>	<b>4.806</b>	<b>32 / 360</b>	<b>37 / 492</b>

IBD;  $P = 0.350$ , Heterogeneity:  $I^2 = 0\%$ ,  $Q = 0.00$ ,  $P = 1.000$   
 RD;  $P = 0.360$ , Heterogeneity:  $I^2 = 77.8\%$ ,  $Q = 4.50$ ,  $P = 0.034$   
 Overall:  $P = 0.972$ , Heterogeneity:  $I^2 = 73.5\%$ ,  $Q = 7.55$ ,  $P = 0.023$



(D) Funnel plot (Ventilation)

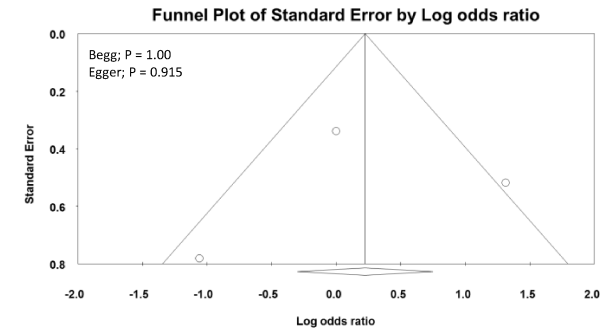


Figure S7. Funnel plots for meta-analysis regarding clinical outcomes of COVID-19 in patients with autoimmune diseases (case-controlled studies)

