

Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Baseline characteristics

Author	Vaccination status	Ethnicity and race, N(%)	Obesity, N(%)	Respiratory disease, N(%)	Cardiovascular disease, N(%)	Immuno-suppression, N(%)	Neurologic disease, N(%)	Diabetes, N(%)	Chronic kidney disease, N(%)	Cancer, N(%)
Cohen-Stavi CJ ³¹	Vaccinated	General Jewish, 79560(84); Arab, 11180(12); Ultra-Orthodox Jewish, 3988(4.2)	15802 (17)	Asthma, 3444(3.6)	76 (<0.1) NA	986 (1.0)	797 (0.8)	96 (<0.1)	1671 (1.8)	48 (<0.1)
	Unvaccinated	General Jewish, 79560(84); Arab, 11180(12); Ultra-Orthodox Jewish, 3988(4.2)	15802 (17)	Asthma, 3646 (3.8)	101 (0.1) NA	1042 (1.1)	954 (1.0)	105 (0.1)	1714 (1.8)	62 (<0.1)
Fleming-Dutra KE ³⁰	Vaccinated	American Indian or Alaska natives, 155(1.1); Asian 2222(15.5); Black or African American, 1402(9.8); Native Hawaiian or Other Pacific Islander, 57(0.4); White, 10518(73.3); Hispanic/Latino, 3014(20.3)	NA	NA	NA	0(0)	NA	NA	NA	NA
	Unvaccinated	American Indian or Alaska Native, 650(1.3); Asian, 3017(5.8); Black or African	NA	NA	NA	0(0)	NA	NA	NA	NA

		American, 12037(23.3); Native Hawaiian or Other Pacific Islander, 57(0.4); White, 35381(68.6); Hispanic/Latino, 14324(26.6,)								
Price AM ¹⁴	Vaccinated	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fowlkes AL ¹³	2 doses	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1 dose	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tan SHX ³³	2 doses	Chinese 5134163(69.3); Malay, 1240769(16.8); Indian, 785266(10.6); Other, 244868(3.3)	NA	NA	NA	NA	NA	NA	NA	NA
	1 dose	Chinese, 3720381(69.7); Malay, 889602(16.7); Indian, 557723(10.4); Other, 172499(3.2)	NA	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	Chinese, 3619247(70.7); Malay, 743466(14.5); Indian, 494626(9.7); Other, 261129(5.1)	NA	NA	NA	NA	NA	NA	NA	NA

Sacco C ³⁴	2 doses	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1 dose	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	NA	NA	NA	NA	NA	NA	NA	NA	NA
Klein NP ²⁰	Vaccinated	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	NA	NA	NA	NA	NA	NA	NA	NA	NA
Creech CB ¹⁹	Vaccinated	White, 1957(65.1); Black, 309(10.3); Asian, 298(9.9); American Indian or Alaska Native, 14(0.5); Native Hawaiian or Other Pacific Islander, 4(0.1); Multiracial, 327(10.9); Other race, 62(2.1); Hispanic/Latinx, 561(18.7); non-Hispanic/Latinx, 2417(80.4)	NA	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	White, 668(67.1); Black, 93(9.3); Asian, 100(10.1); American Indian or Alaska Native, 3(0.3); Native Hawaiian or Other Pacific Islander, 0(0); Multiracial, 97(9.7); Other race, 22(2.2);	NA	NA	NA	NA	NA	NA	NA	NA

		Hispanic/Latinx, 181(18.2); non-Hispanic/Latinx, 805(80.9)								
Walter EB ¹⁵	Vaccinated	White, 1204(79.3); Black, 89(5.9); Asian, 90(5.9); Multiracial, 109(7.2); Other or not responded, 26(1.7); Hispanic/Latinx, 319(21.0)	608 (20.2)	Asthma/Chronic lung disease, 529(17.6)	19(0.6)	HIV infection, 4(0.1)	NA	9(0.3)	NA	NA
	Unvaccinated	White, 586(78.1); Black, 58(7.7); Asian, 47(6.3); Multiracial, 49(6.5); Other or not reported, 10(1.3); Hispanic/Latinx, 159(21.2)	195 (19.6)	Asthma/Chronic lung disease, 173(17.4)	7(0.7)	HIV infection, 0(0)	NA	5(0.5)	NA	NA
Zambrano LD ¹²	Vaccinated	NA	174 (11.5)	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	NA	92 (12.3)	NA	NA	NA	NA	NA	NA	NA
Amir O ³⁵	Vaccinated	General Jewish, 347726(94.9); Ultra-orthodox, 11871(3.2); Arab, 6767(1.8)	NA	NA	NA	NA	NA	NA	NA	NA

	Unvaccinated	General Jewish, 318513(86.7); Ultra-orthodox, 24140(6.6); Arab, 24515(6.7)	NA	NA	NA	NA	NA	NA	NA	NA
Shi DS ³⁶	Vaccinated	White, non-Hispanic, 27(66.5); Hispanic, 6(21.2); Asian or Pacific Islander, non-Hispanic, 6(6.1); Black, non-Hispanic, 6(5.4); Other races/unknown, 3(0.9)	NA	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	Black, non-Hispanic, 101(34.0); White, non-Hispanic, 93(30.7); Hispanic, 79(18.9); Asian or Pacific Islander, non-Hispanic, 12(6.1); Other races/unknown, 16(10.3,)	NA	NA	NA	NA	NA	NA	NA	NA
Block JP ³⁷	2 doses	Asian, 131205(5); Black or African American, 395283(16); Other, 90122(4); White, 1407974(57); Missing, 204224(8); Hispanic, 298270(12)	NA	NA	NA	NA	NA	NA	NA	NA
	1 dose	Asian, 133445(5); Black or African American, 408657(16);	NA	NA	NA	NA	NA	NA	NA	NA

		Other, 93100(4); White, 1441573(57); Missing, 205834(8); Hispanic, 309468(12)								
	Dose unknown	Asian, 83937(5); Black or African American, 283534(17); Other, 54305(3); White, 1001686(60); Missing, 98299(6); Hispanic, 169688(10)	NA	NA	NA	NA	NA	NA	NA	NA
	Unvaccinated	Asian, 348587(5); Black or African American, 1087474(16); Other, 237527(4); White, 3851233(57); Missing, 205834(8); Hispanic, 777426(12)	NA	NA	NA	NA	NA	NA	NA	NA
Hause AM ³⁹	3 doses	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2 doses	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1 dose	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hause AM ³⁸	2 doses	NA	NA	NA	NA	NA	NA	NA	NA	

	1 dose	Hispanic, 7082(14.5); Not Hispanic, 40116(82.2); Unknown, 1597(3.3)	NA	NA	NA	NA	NA	NA	NA	NA
Capponi M ⁴¹	2 doses	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1 dose	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bloise S ⁴⁰	2 doses	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1 dose	NA	NA	Asthma, 46(51)	9(10)	NA	8(9)	NA	7(8)	NA

NA, not available

eTable 2. Risk of bias assessment for randomized trials

Author	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome assessment (attrition bias)	Selective reporting (reporting bias)	Other bias
Walter EB ¹⁵	-	-	-	-	-	-	-
Creech CB ¹⁹	-	-	-	-	-	-	+

Each domain was judged as 'low risk of bias' (-), 'high risk of bias' (+), or 'unclear risk of bias' (?) in each study according to the Revised Cochrane risk-of-bias tool for randomized trials

eTable 3. Risk of bias assessment for observational studies

Author	Risk of bias due to confounding	Risk of bias in selection of participants into the study	Risk of bias in departures from exposure	Risk of bias due to deviations from intended interventions	Risk of bias due to missing data	Risk of bias in measurement of the outcome	Risk of bias in selection of the reported result
Cohen-Stavi CJ ³¹	Low	Low	Low	Low	Low	Low	Low
Fleming-Dutra KE ³⁰	Moderate	Low	Moderate	Low	Moderate	Low	Low
Price AM ¹⁴	Moderate	Low	Moderate	Low	Low	Moderate	Low
Fowlkes AL ¹³	Moderate	Low	Low	Low	Low	Low	Low
Tan SHX ³³	Moderate	Low	Low	Low	Low	Low	Low
Sacco C ³⁴	Moderate	Low	Low	Low	Low	Low	Low
Klein NP ²⁰	Moderate	Low	Low	Low	Low	Low	Low
Zambrano LD ¹²	Moderate	Low	Low	Low	Low	Low	Low
Amir O ³⁵	Moderate	Moderate	Low	Low	Low	Moderate	Low
Shi DS ³⁶	Serious	Low	Moderate	No information	Low	Moderate	Low
Block JP ³⁷	Moderate	Low	Low	Low	Low	Low	Low
Hause AM ³⁹	Serious	Moderate	Low	Low	Low	Low	Low

Hause AM ³⁸	Moderate	Low	Low	Low	Low	Low	Low
Capponi M ⁴¹	Moderate	Low	Low	Low	Low	Low	Low
Bloise S ⁴⁰	Moderate	Low	Low	Low	Moderate	Low	Low

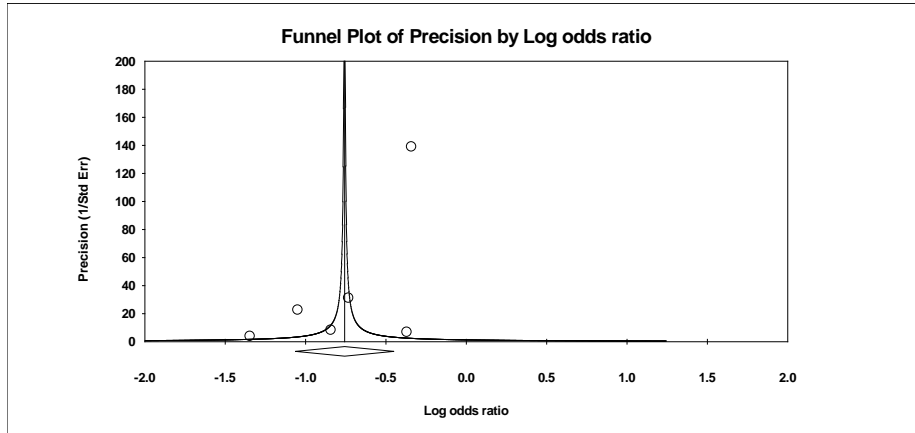
Each domain was judged as 'Low risk of bias', 'Moderate risk of bias', 'Critical risk of bias', or 'No information' in each study according to the Risk Of Bias In Non-randomized Studies of Exposure (ROBINS-E) tool.

eTable 4. The overall certainty of each outcome

Outcome	Number of studies	Included study types	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Effect size (OR or proportion [95%CI])	GRADE
SARS-CoV-2 infections regardless of the presence of symptoms	6	RCT and OS	No serious limitation	No serious inconsistency	No serious indirectness	No serious imprecision	No serious publication bias	0.47 (0.35-0.64)	High
Symptomatic SARS-CoV-2 infection	6	RCT and OS	No serious limitation	No serious inconsistency	No serious indirectness	No serious imprecision	Some concerns in publication bias	0.53 (0.41-0.70)	High
Hospitalizations due to COVID-19-related illnesses	4	OS	No serious limitation	No serious inconsistency	No serious indirectness	No serious imprecision	No serious publication bias	0.32 (0.15-0.68)	Moderate
Multisystem inflammatory syndrome in children	2	OS	No serious limitation	No serious inconsistency	No serious indirectness	No serious imprecision	Potential limitations are likely due to the number of studies	0.05 (0.02-0.10)	Moderate
Any adverse events	2	RCT	No serious limitation	No serious inconsistency	No serious indirectness	No serious imprecision	Potential limitations are likely due to the number of studies	1.92 (1.26-2.91)	Moderate
Adverse events that prevented normal daily activities	2	RCT	No serious limitation	No serious inconsistency	No serious indirectness	No serious imprecision	Potential limitations are likely due to the number of studies	1.86 (0.39-8.94)	Moderate

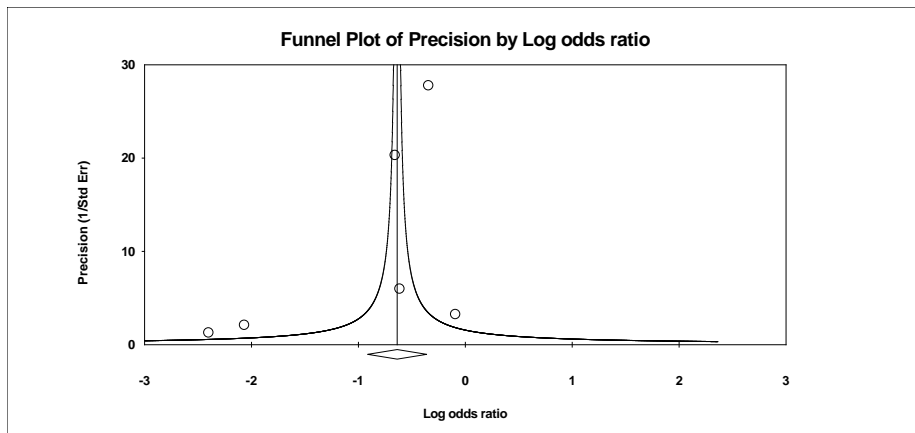
eFigure 1. Funnel plots for outcomes comparing vaccinated and unvaccinated children

a) SARS-CoV-2 infection with or without symptoms



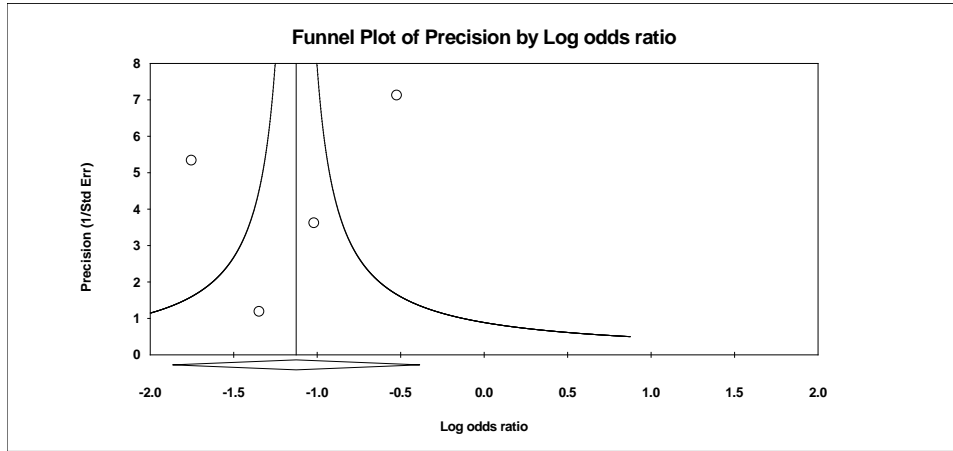
Egger's test provided a p-value of 0.106

b) Symptomatic SARS-CoV-2 infection



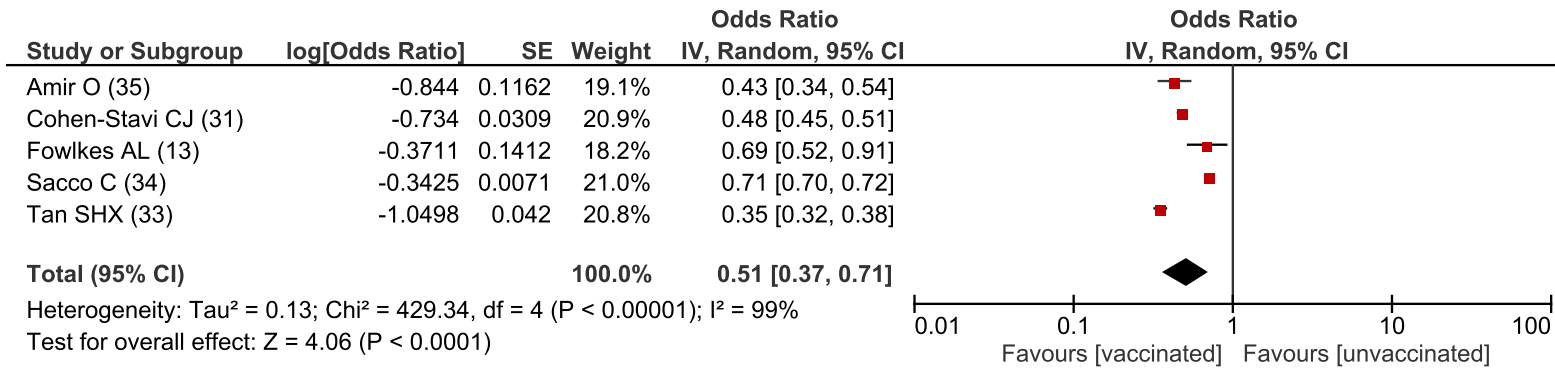
Egger's test provided a p-value of 0.285

c) Hospitalization due to COVID-19-related illnesses



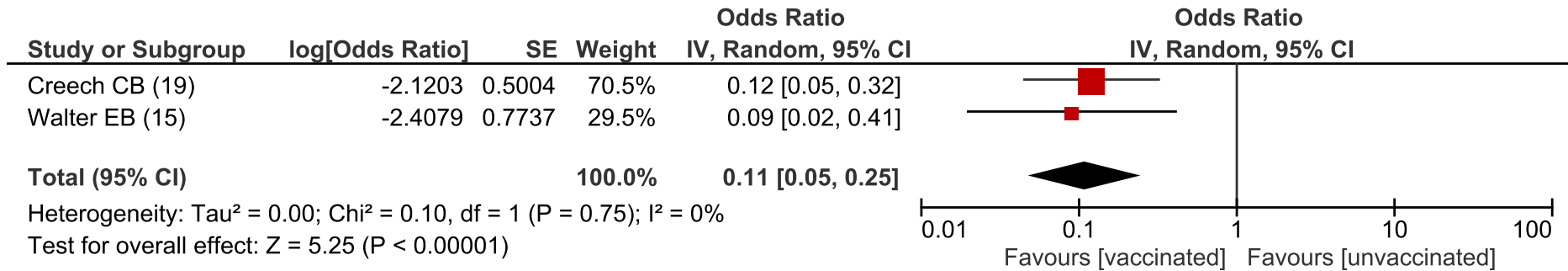
Egger's test provided a p-value of 0.691.

eFigure 2. Forest plots for SARS-CoV-2 infections with or without symptoms in the omicron-predominant period

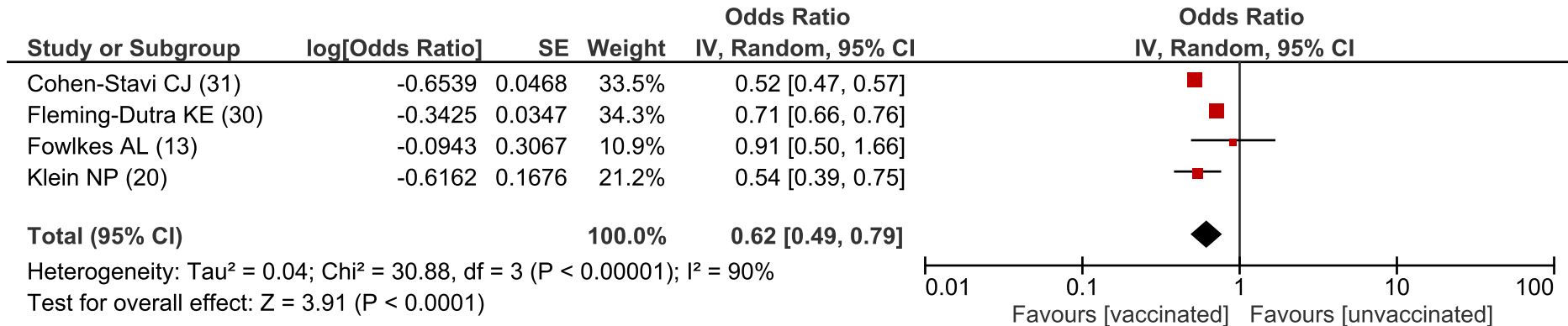


eFigure 3. Forest plots for symptomatic SARS-CoV-2 infections according to the predominant subvariants

a) Delta-predominant period

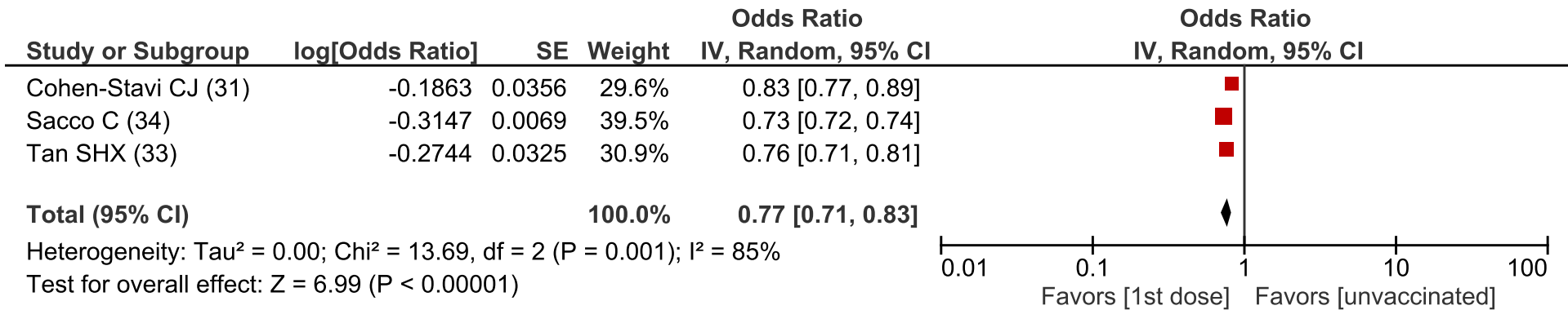


b) Omicron-predominant period

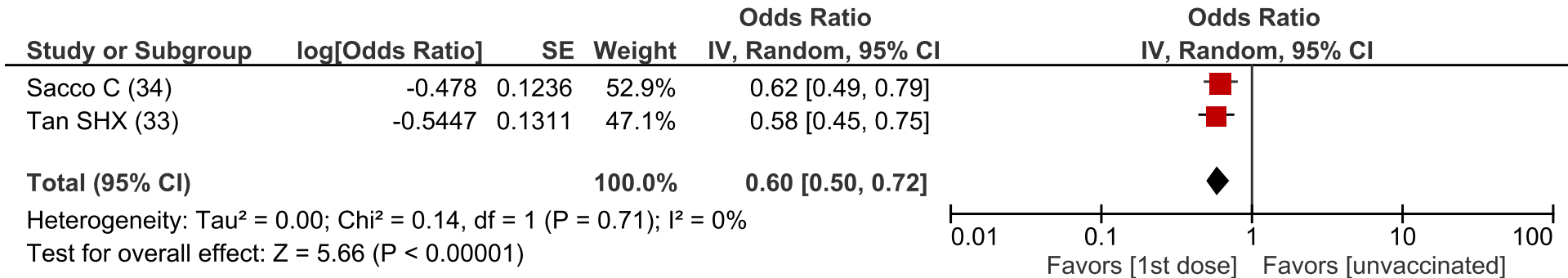


eFigure 4. Forest plots comparing 1-dose vaccination versus no vaccination

a) SARS-CoV-2 infections with or without symptoms

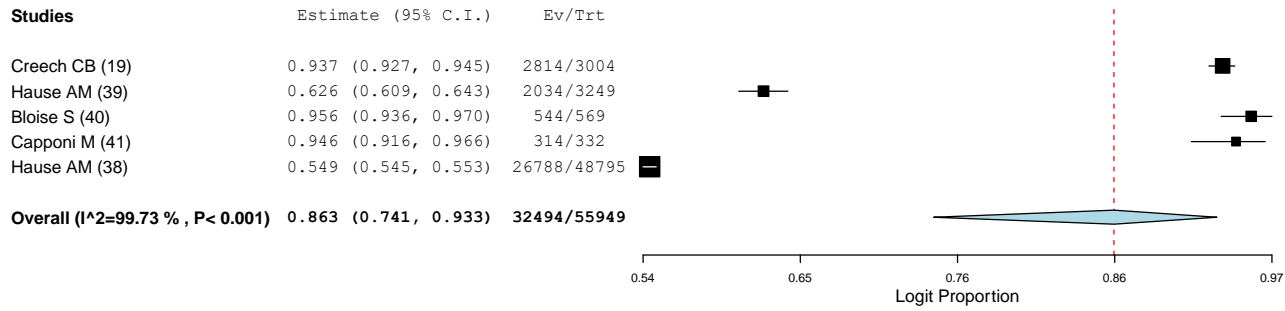


b) Hospitalizations due to COVID-19-related illnesses

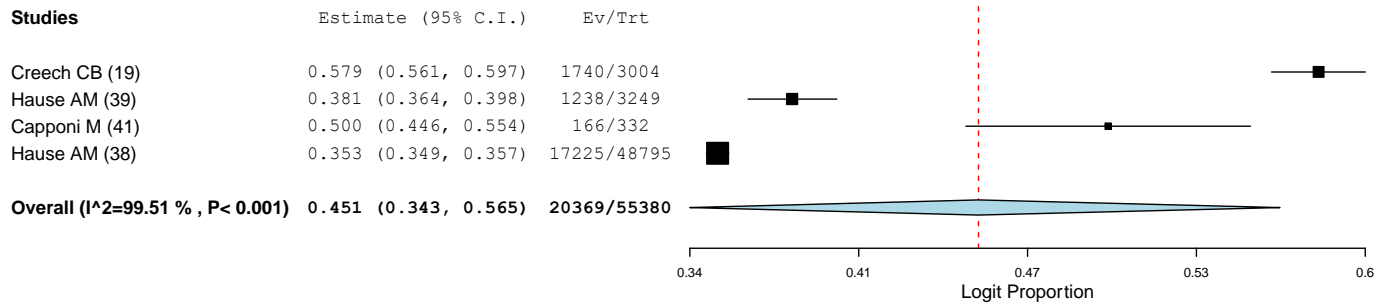


eFigure 5. Forest plots showing the proportion of adverse events following the 1st dose of mRNA vaccination

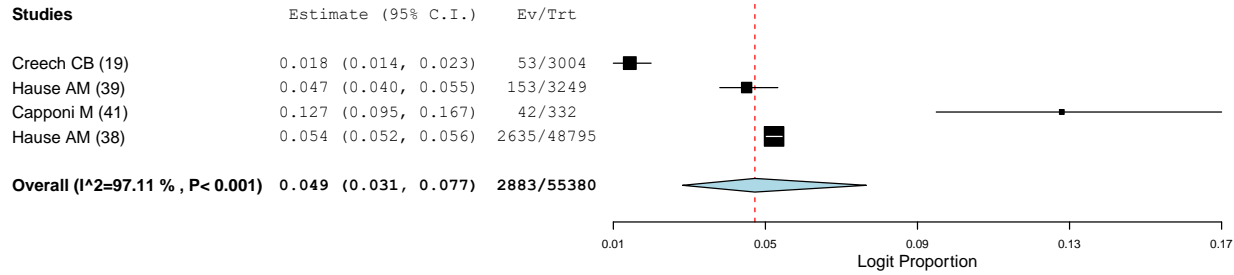
(a) Any local adverse events



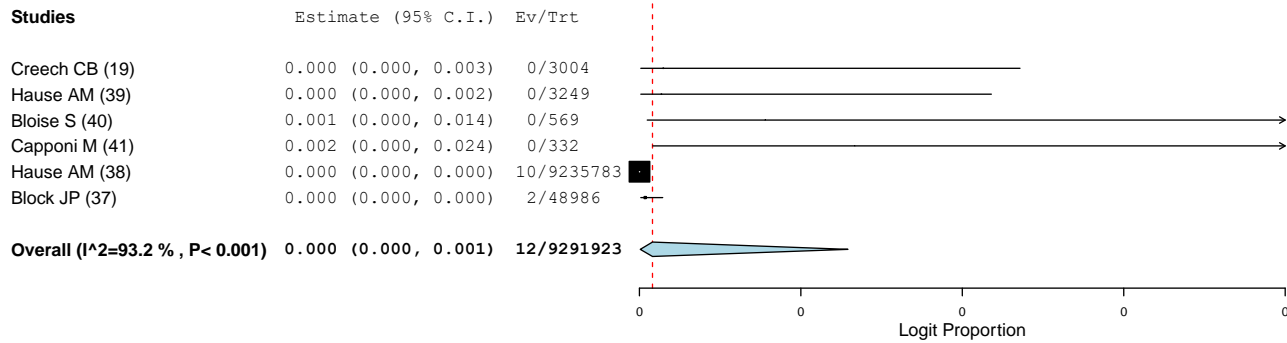
(b) Any systemic adverse events



(c) Adverse events that prevented normal daily activities

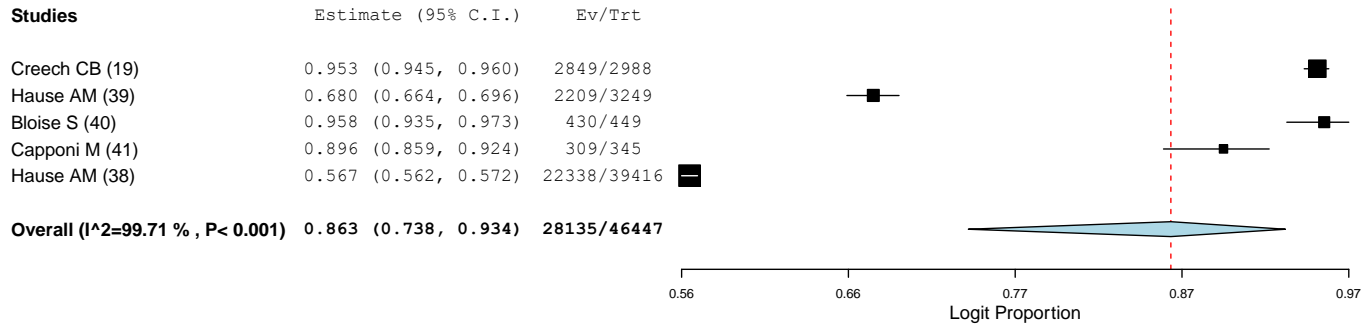


(d) Myocarditis

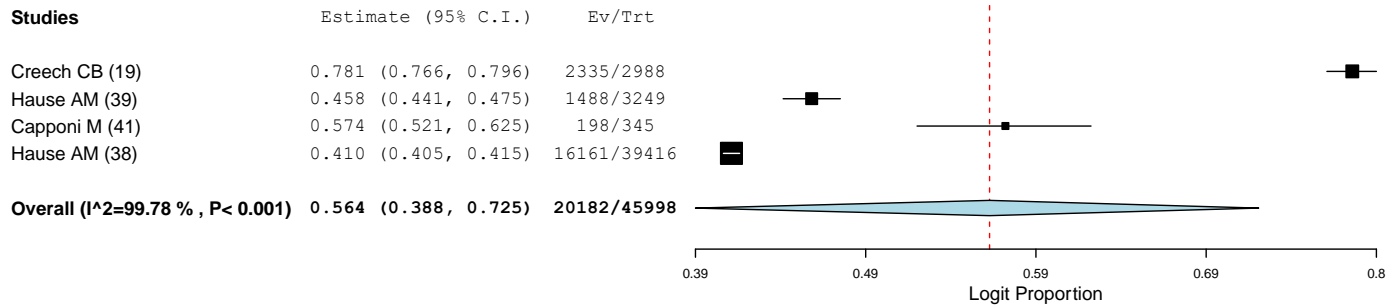


eFigure 6. Forest plots showing the proportion of adverse events following the 2nd dose of mRNA vaccine

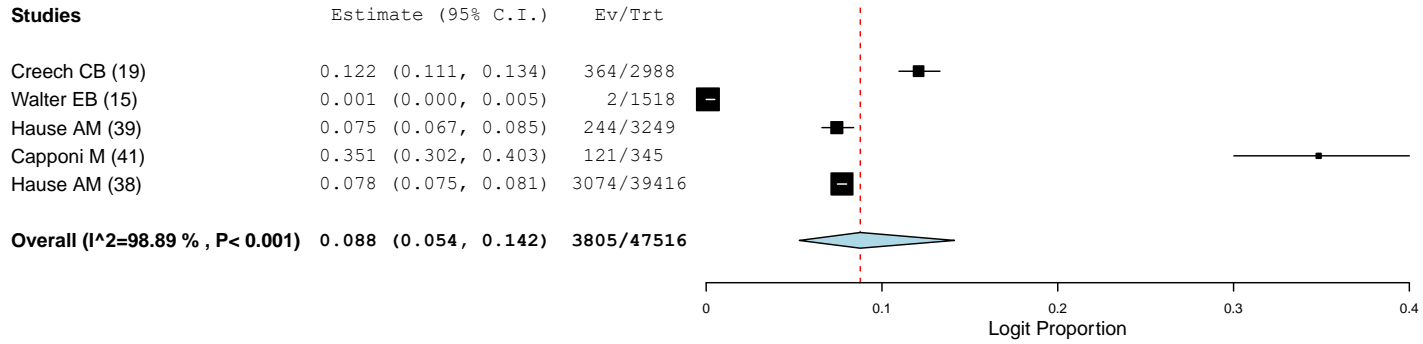
a: any local adverse events



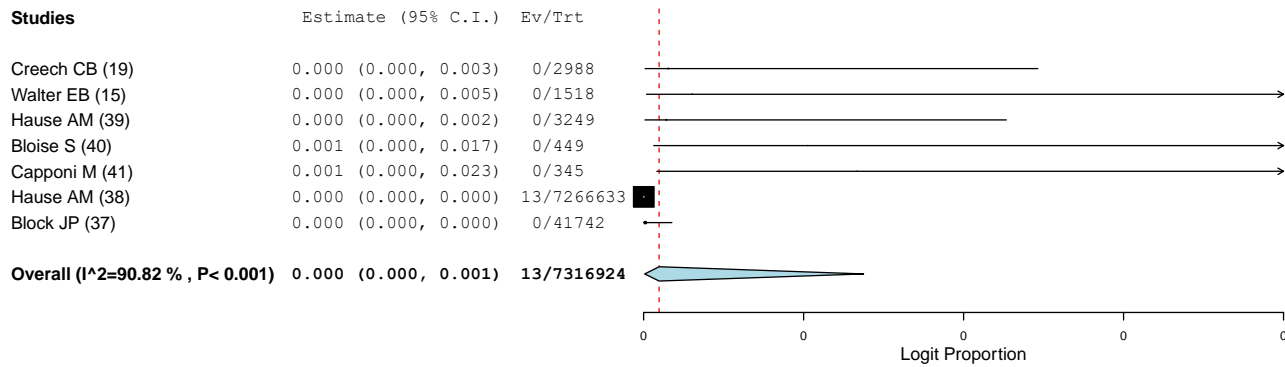
b: any systemic events



c: any adverse events that prevented normal daily activities

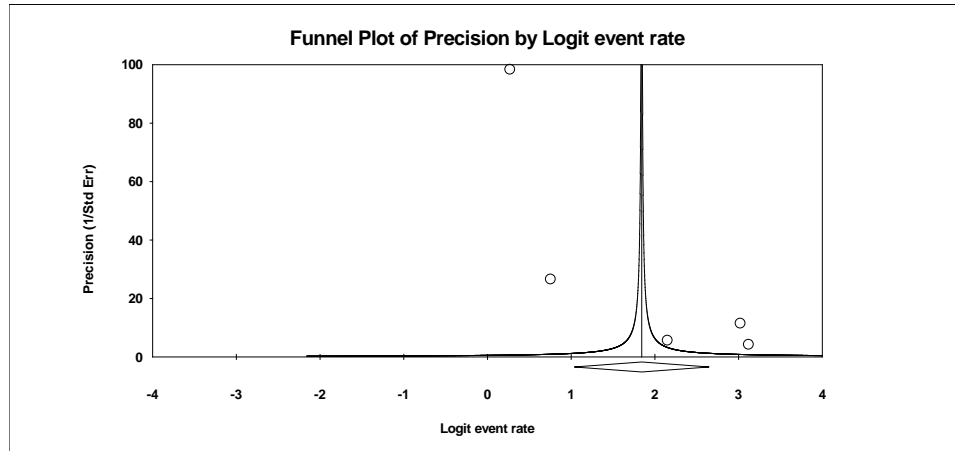


d: myocarditis



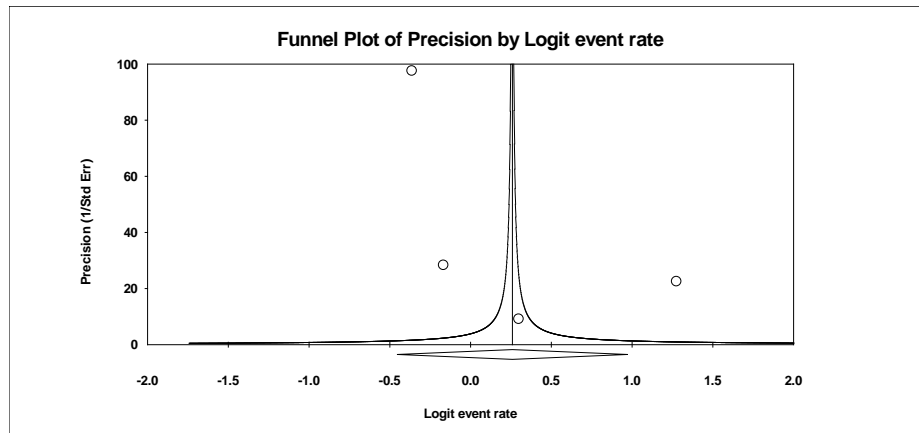
eFigure 7. Funnel plots for the proportion of each adverse events following the 2nd dose of mRNA vaccination

a) Any local adverse events



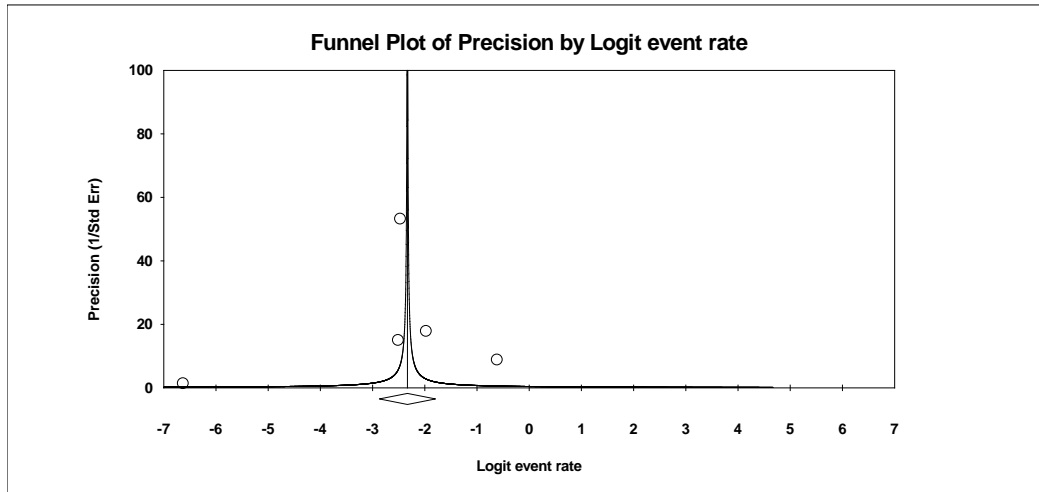
Egger's test provided a p-value of 0.050.

b) Any systemic adverse events



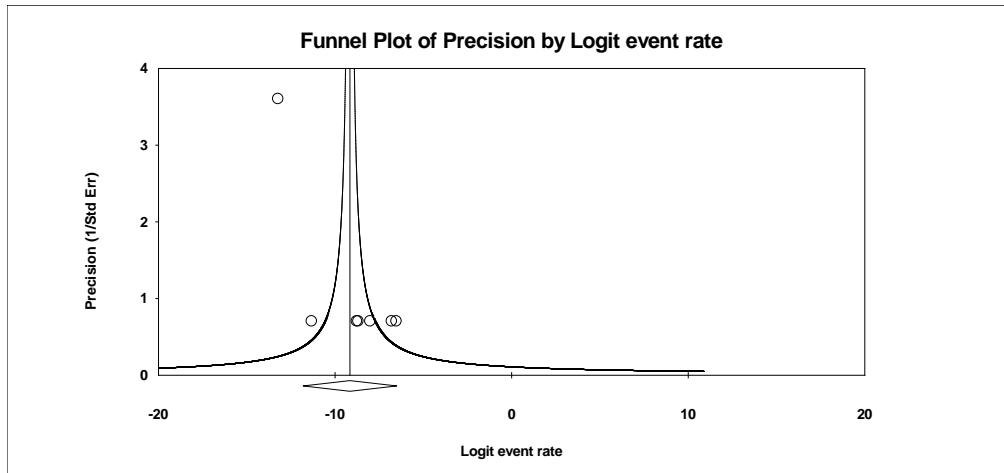
Egger's test provided a p-value of 0.302.

c) Adverse events that prevented normal daily activities



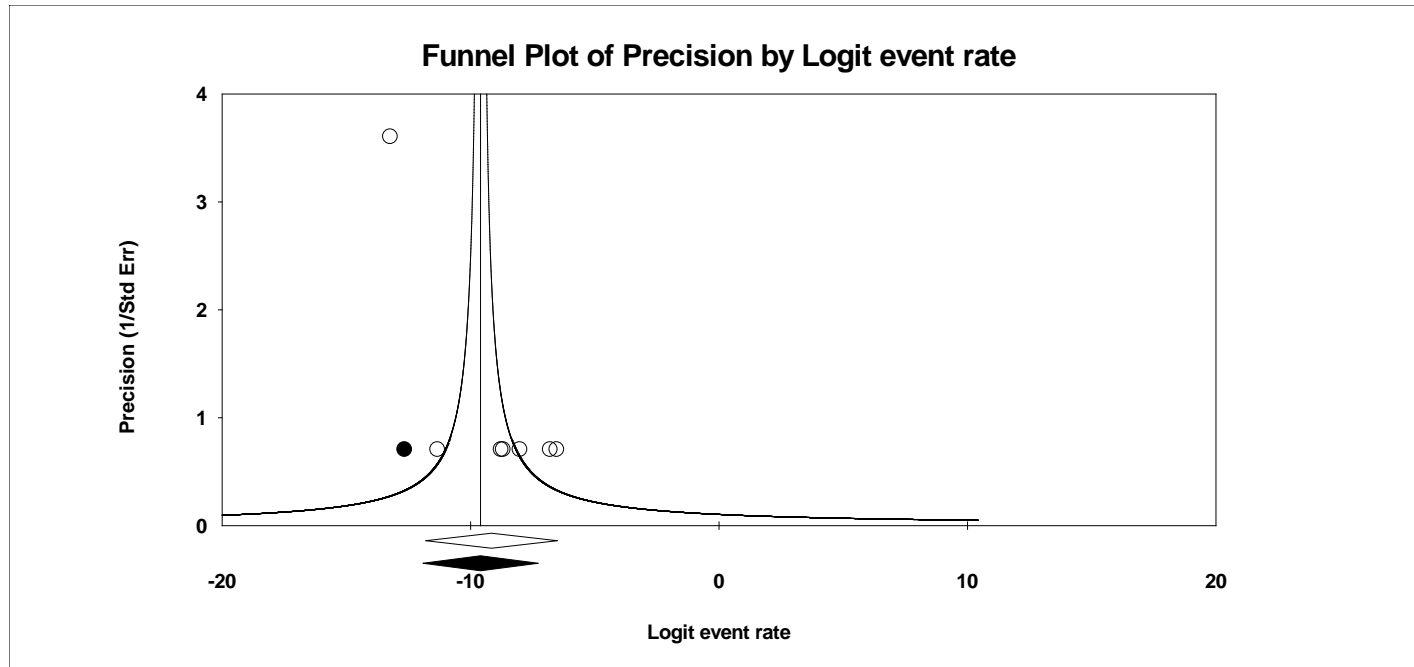
Egger's test provided a p-value of 0.534.

d) Myocarditis



Egger's test provided a p-value of 0.002

eFigure 8. Sensitivity analysis using the trim-and-fill technique for myocarditis



Trim-and-fill analysis provided a pooled proportion of <math><0.0002</math> (95% confidence interval 0.000-0.001)