

Surgical aortic valve replacement and patient-prosthesis mismatch: a meta-analysis of 108 182 patients

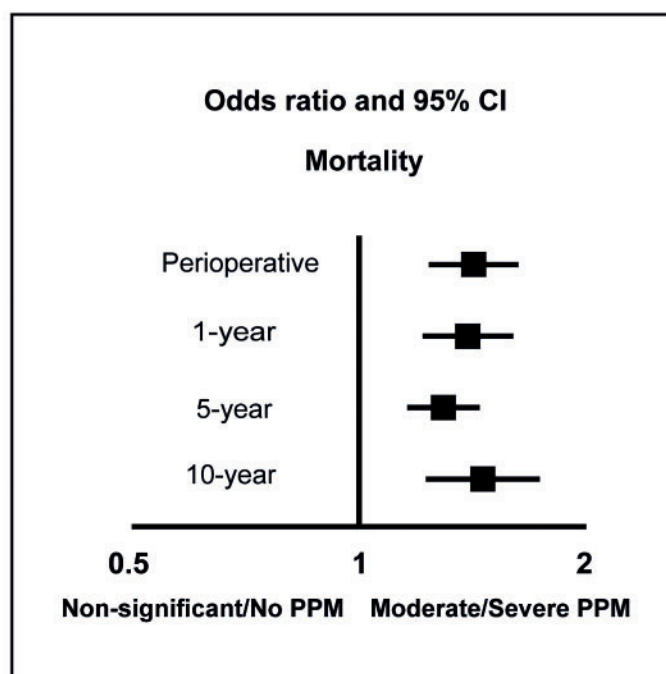
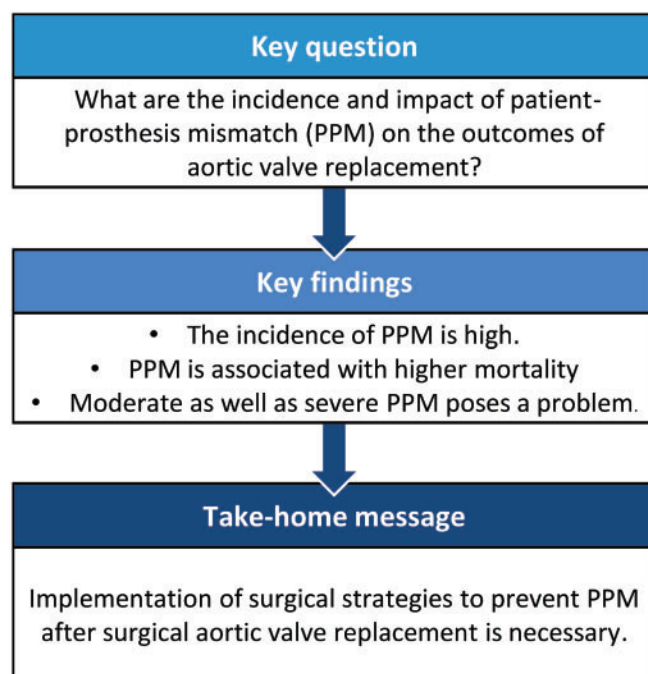
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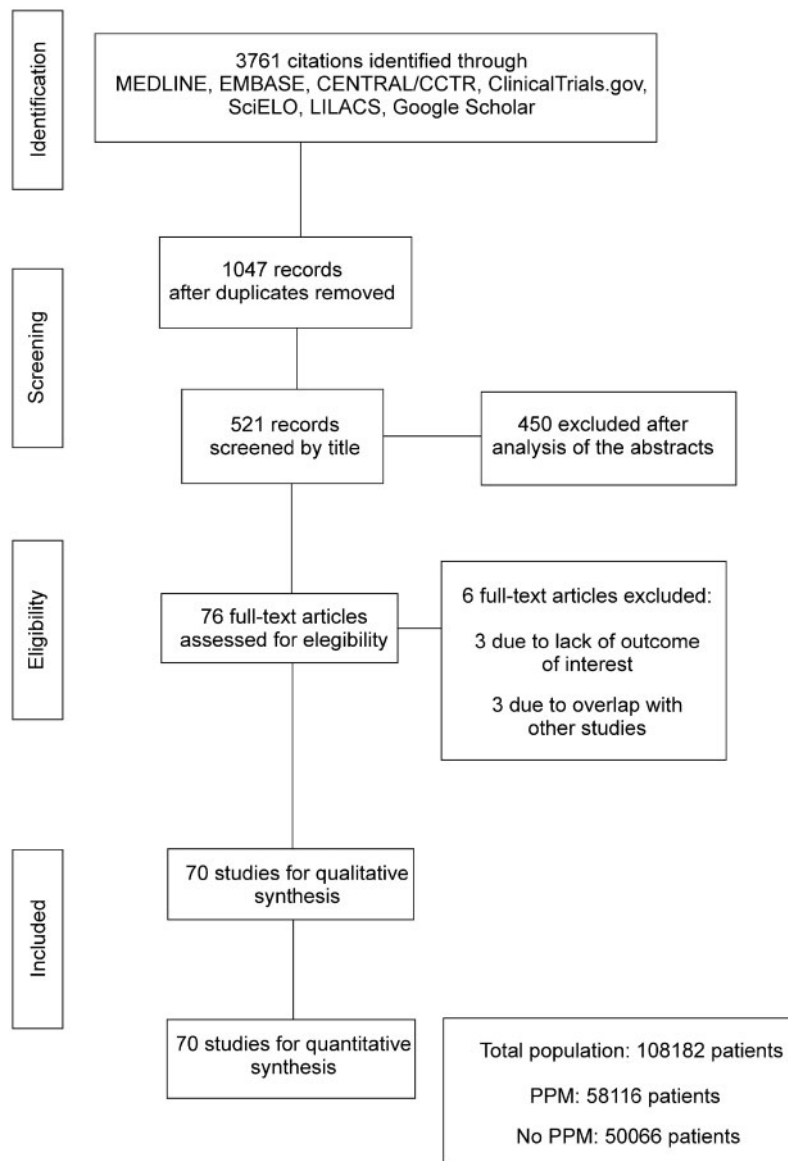


Figure 1: Flow diagram of studies included in data search. CCTR: Cochrane Controlled Trials Register; LILACS: Literatura Latino Americana em Ciências da Saúde; PPM: patient-prosthesis mismatch; SciELO: Scientific Electronic Library Online.

Moderate/Severe PPM vs Non-significant/No PPM

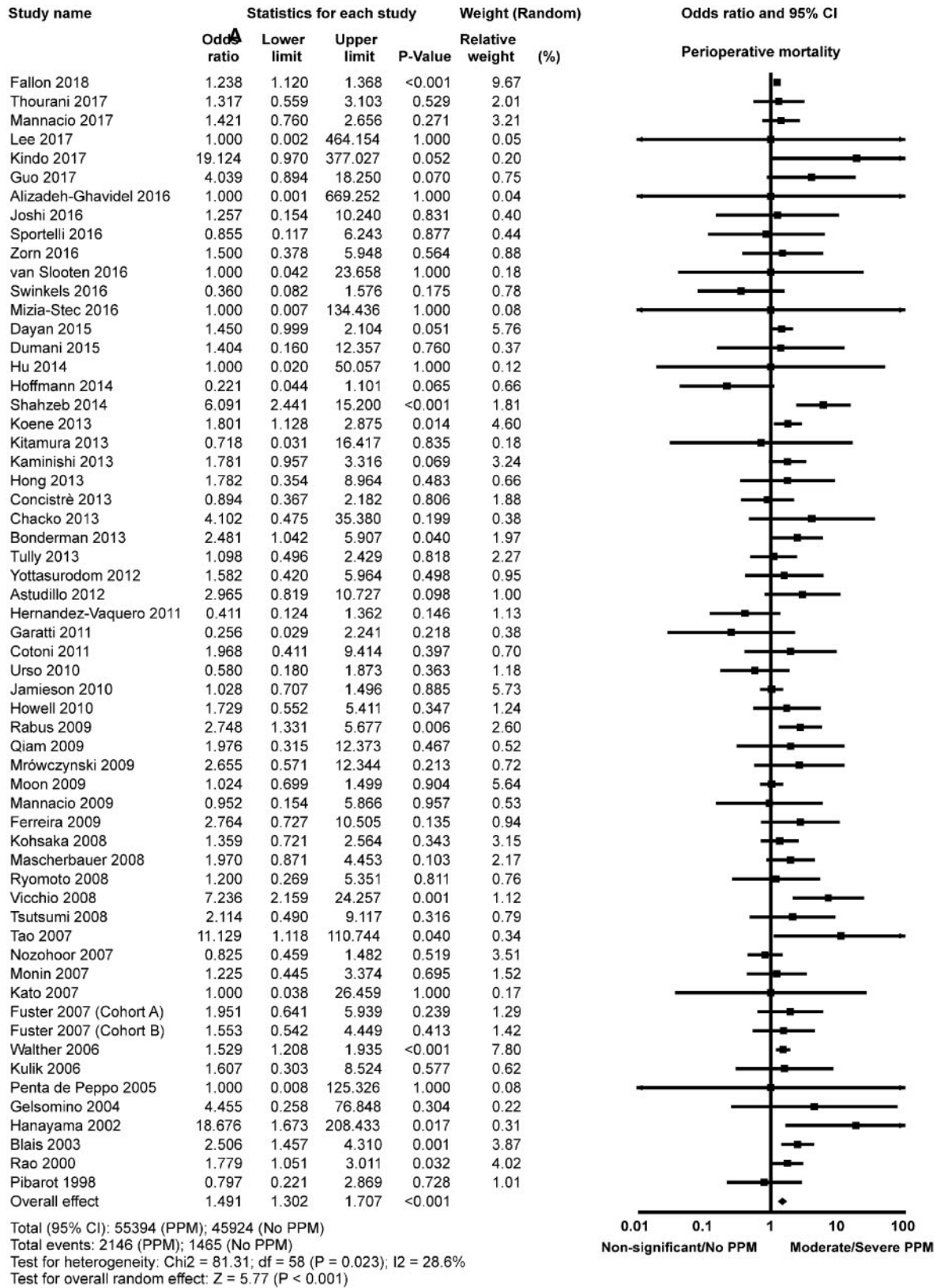


Figure 2: Odds ratio and conclusions plot of perioperative mortality. The summary effect of moderate/severe PPM on perioperative mortality is shown. CI: confidence interval; PPM: patient–prosthesis mismatch.

Moderate/Severe PPM vs Non-significant/No PPM

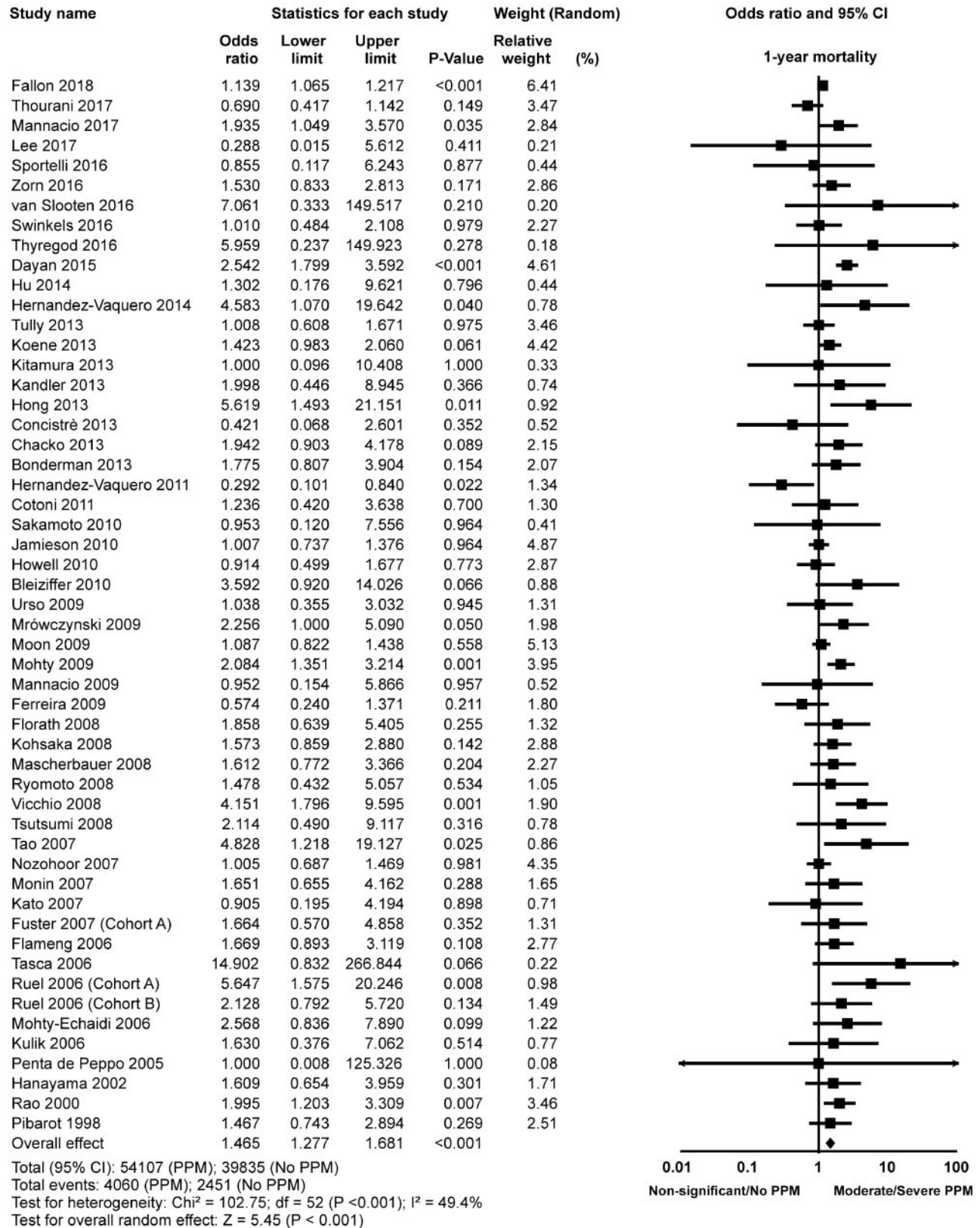


Figure 3: Odds ratio and conclusions plot of 1-year mortality. The summary effect of moderate/severe PPM on 1-year mortality is shown. CI: confidence interval; PPM: patient-prosthesis mismatch.

Moderate/Severe PPM vs Non-significant/No PPM

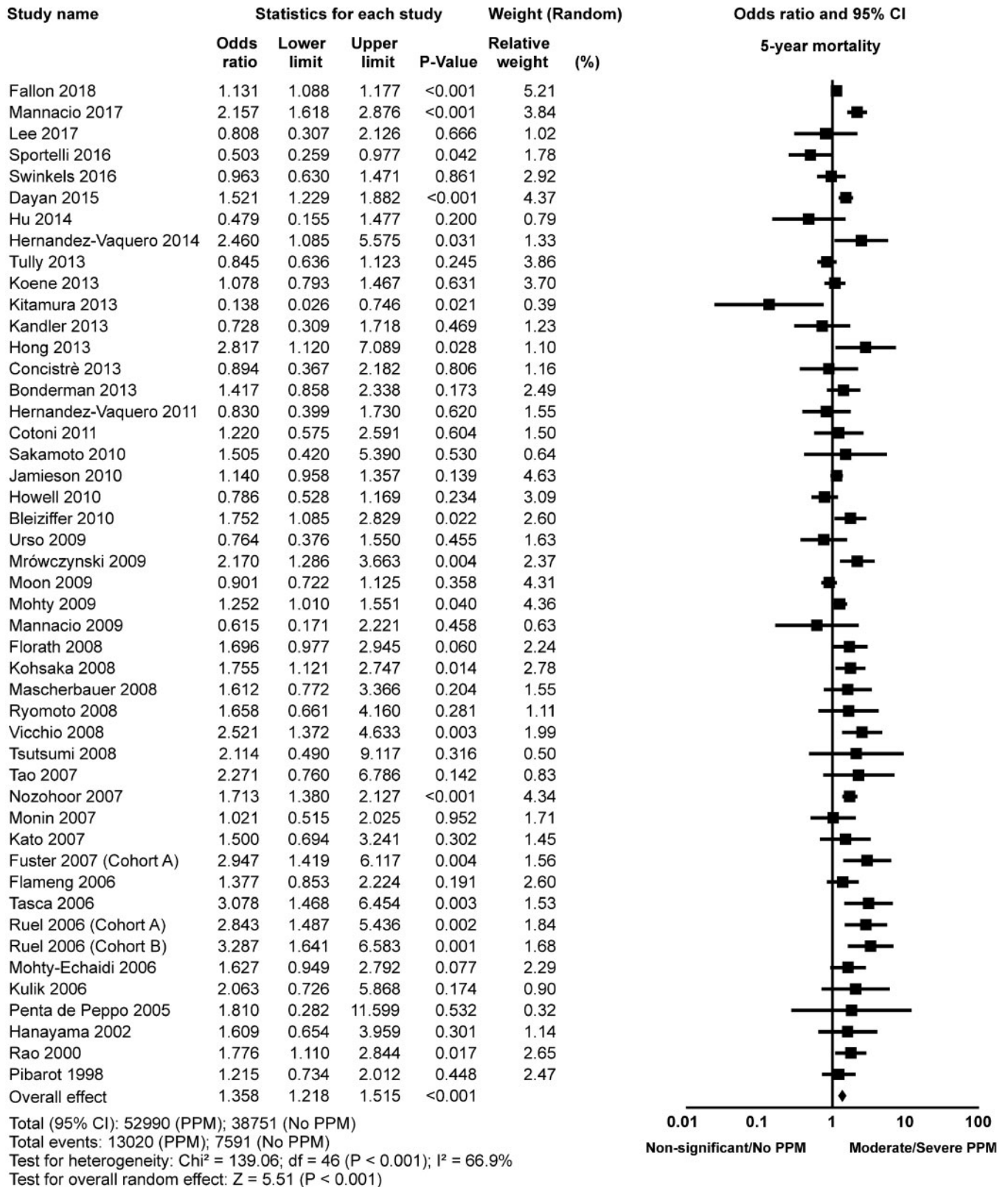


Figure 4: Odds ratio and conclusions plot of 5-year mortality. The summary effect of moderate/severe PPM on 5-year mortality is shown. CI: confidence interval; PPM: patient-prosthesis mismatch.

Moderate/Severe PPM vs Non-significant/No PPM

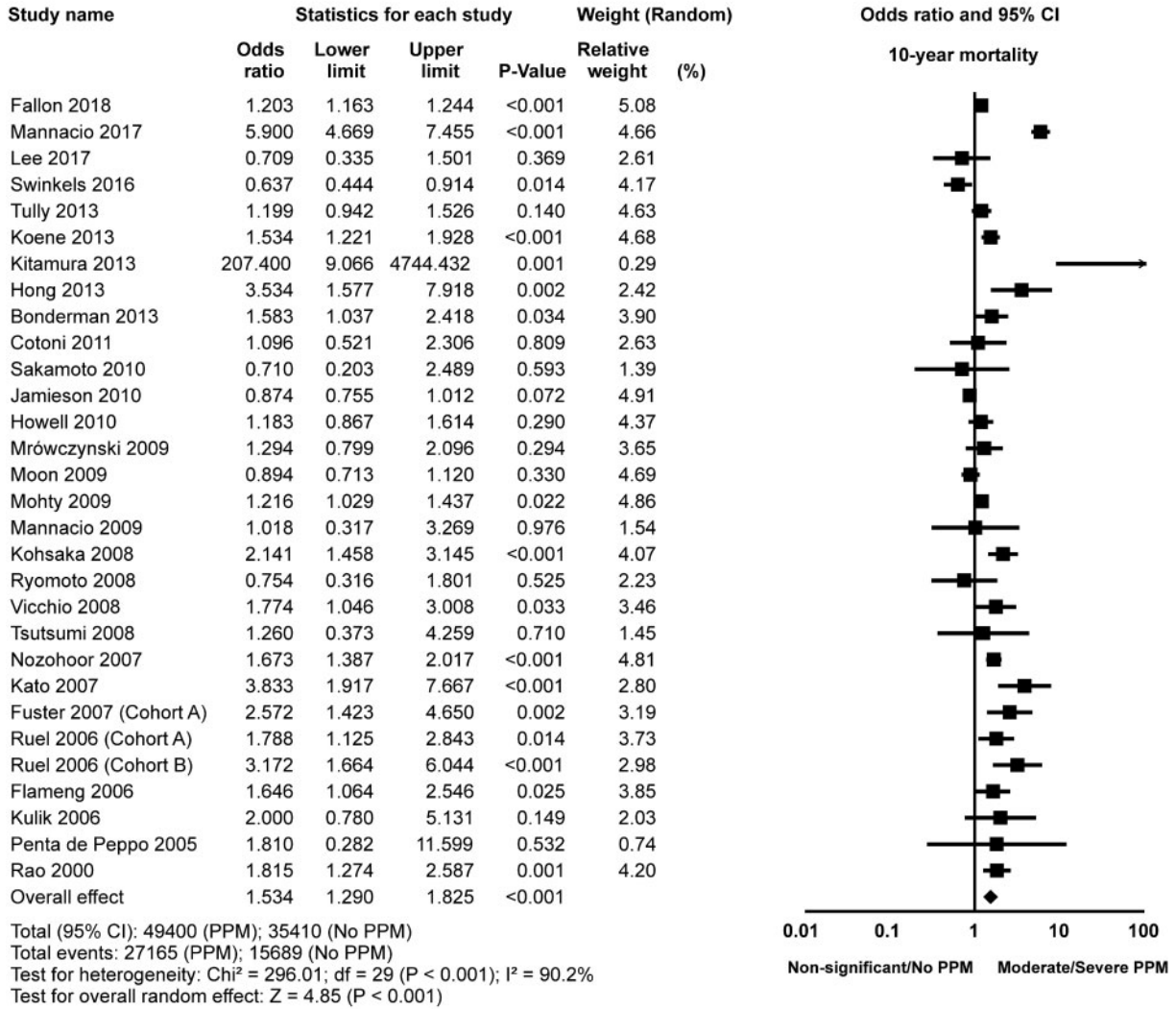


Figure 5: Odds ratio and conclusions plot of 10-year mortality. The summary effect of moderate/severe PPM on 10-year mortality is shown. CI: confidence interval; PPM: patient-prosthesis mismatch.

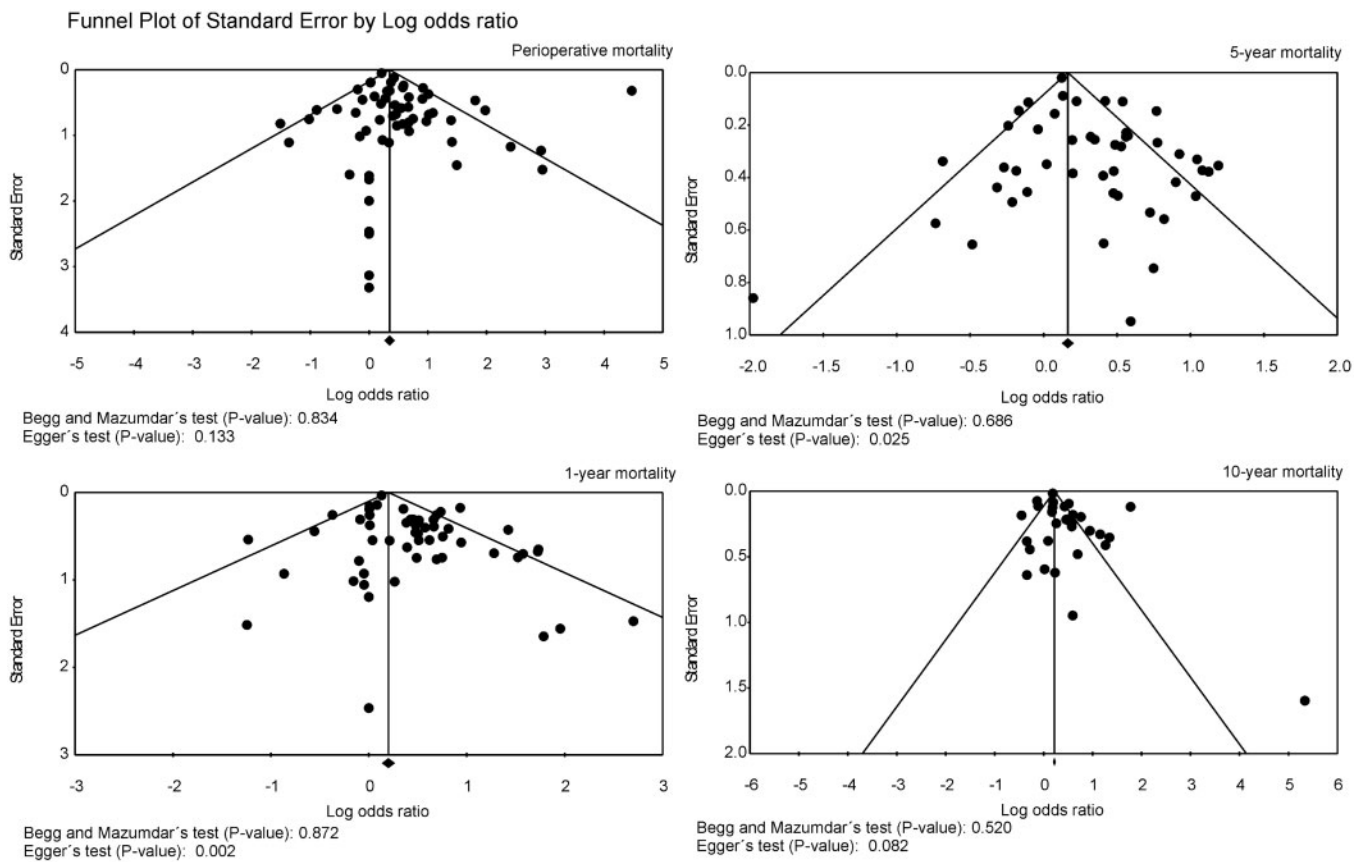


Figure 6: Publication bias. Funnel plot analysis of the outcomes on perioperative mortality, 1-year mortality, 5-year mortality and 10-year mortality.

Table 1: Sensitivity analysis

Perioperative mortality	Studies (N)	Patients (N)	Summary measures			Heterogeneity	
			OR	95% CI	P-value	I ² (%)	χ ² P-value
Moderate PPM^a							
Perioperative	32	76 540	1.283	1.095–1.503	<0.001	25.9	0.002
1 year	30	76 494	1.232	1.020–1.489	0.031	66.3	<0.001
5 years	27	75 446	1.231	1.091–1.388	0.001	65.4	<0.001
10 years	18	67 842	1.310	1.028–1.668	0.029	92.6	<0.001
Severe PPM^a							
Perioperative	26	40 723	2.284	1.566–3.329	<0.001	61.4	<0.001
1 year	24	38 480	2.136	1.575–2.897	<0.001	65.0	<0.001
5 years	18	36 659	1.841	1.401–2.418	<0.001	78.1	<0.001
10 years	13	35 152	1.963	1.173–3.285	<0.001	94.3	<0.001
Severe PPM versus moderate PPM							
Perioperative	23	50 924	1.736	1.252–2.406	0.001	51.2	0.003
1 year	20	48 532	1.532	1.169–2.006	0.002	53.5	0.003
5 years	17	47 536	1.412	1.165–1.710	<0.001	56.7	0.002
10 years	13	46 555	1.476	1.103–1.952	0.009	79.3	<0.001

^aCompared with non-significant/no PPM.

CI: confidence interval; OR: odds ratio; PPM: patient–prosthesis mismatch.

Table 2: Sensitivity analysis

Perioperative mortality	Studies (N)	Patients (N)	Summary measures			Heterogeneity	
			OR	95% CI	P-value	I ² (%)	χ ² P-value
Patients included only within the last 10 years ^a	10	7245	1.750	1.167–2.623	0.007	0.0	0.886
Type of valve ^a							
Only mechanical	14	3431	1.678	1.145–2.457	0.008	40.8	0.088
Only bioprosthesis	9	6251	1.330	0.858–2.060	0.203	0.0	0.491
iEOA measurement ^a							
<i>In vitro</i>	10	15 241	1.787	1.450–2.203	<0.001	9.9	0.350
<i>In vivo</i>	32	77 286	1.272	1.071–1.512	0.006	27.6	0.077
Doppler echocardiography	17	8791	1.799	1.309–2.472	<0.001	0.0	0.565

^aComparing moderate/severe PPM with non-significant/no PPM.

CI: confidence interval; iEOA: indexed effective orifice area; OR: odds ratio; PPM: patient–prosthesis mismatch.