

## **Supplementary Materials**

### **Predictors of short-term mortality in patients undergoing emergency coronary artery bypass grafting: a systematic review and meta-analysis**

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**Table 1. Risk of bias**

<b>First author</b>	<b>Confounding</b>	<b>Participation selection</b>	<b>Interv. classification</b>	<b>Interv. deviation</b>	<b>Missing data</b>	<b>Outcome measurement</b>	<b>Selective reporting</b>	<b>Overall</b>
Locker <i>et al.</i> , 2000 <sup>[23]</sup>	M	L	L	L	L	L	M	M
Hirose <i>et al.</i> , 2002 <sup>[24]</sup>	M	L	L	L	M	L	L	M
Ochi <i>et al.</i> , 2003 <sup>[25]</sup>	M	M	L	L	L	M	L	M
Kerendi <i>et al.</i> , 2005 <sup>[26]</sup>	M	M	L	L	L	M	L	M
Onorati <i>et al.</i> , 2005 <sup>[27]</sup>	M	M	L	L	L	M	M	M
Thielmann <i>et al.</i> , 2006 <sup>[28]</sup>	L	L	L	L	L	L	L	L
Darwazah <i>et al.</i> , 2009 <sup>[29]</sup>	M	M	L	L	L	L	L	M
Kaya <i>et al.</i> , 2010 <sup>[30]</sup>	M	M	L	L	L	L	L	M
Joskowiak <i>et al.</i> , 2010 <sup>[31]</sup>	M	L	L	L	L	L	L	M

Martinez <i>et al.</i> , 2010 <sup>[32]</sup>	M	M	M	L	M	L	L	M
Fattouch <i>et al.</i> , 2011 <sup>[33]</sup>	M	L	L	L	L	L	M	M
Sezai <i>et al.</i> , 2012 <sup>[34]</sup>	M	L	L	L	M	L	L	M
Khaladj <i>et al.</i> , 2013 <sup>[35]</sup>	M	M	L	M	M	L	L	M
Hata <i>et al.</i> , 2014 <sup>[36]</sup>	M	M	L	L	M	L	L	M
Gaudino <i>et al.</i> , 2015 <sup>[37]</sup>	M	M	L	L	L	L	M	M
Davierwala <i>et al.</i> , 2016 <sup>[38]</sup>	M	L	L	L	M	L	M	M
Grothusen <i>et al.</i> , 2017 <sup>[19]</sup>	M	L	L	L	L	L	L	M
Hung <i>et al.</i> , 2021 <sup>[39]</sup>	M	M	L	L	M	L	M	M
Bianchi <i>et al.</i> , 2022 <sup>[40]</sup>	M	M	L	L	M	L	L	M
Tekin <i>et al.</i> ,	L	L	L	M	L	M	L	M

2023 <sup>[41]</sup>								
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ROBINS I Tool. L: Low risk of bias; M: moderate risk of bias; S: serious risk of bias; C: critical risk of bias.

**Table 2. Overall effect sizes of predictors of early mortality in acs patients: leave-one-out analysis**

<b>Factor analysed</b>	<b>Study excluded</b>	<b>Overall effect size (OR), 95%CI</b>
Age	None (initial)	1.40 [1.07, 1.82]
	Hirose <i>et al.</i> , 2002 <sup>[24]</sup>	1.30 [1.03, 1.65]
	Thielmann <i>et al.</i> , 2006 <sup>[28]</sup>	1.82 [1.07, 3.09]
	Joskowiak <i>et al.</i> , 2010 <sup>[31]</sup>	1.30 [1.01, 1.69]
	Sezai <i>et al.</i> , 2012 <sup>[34]</sup>	1.36 [1.05, 1.75]
	Daviewrwala <i>et al.</i> , 2016 <sup>[38]</sup>	1.30 [1.01, 1.69]
	Hung <i>et al.</i> , 2021 <sup>[39]</sup>	1.79 [1.16, 2.77]
Cardiogenic shock	None (initial)	5.35 [3.15, 9.09]
	Hirose <i>et al.</i> , 2002 <sup>[24]</sup>	5.22 [2.93, 9.31]
	Ochi <i>et al.</i> , 2003 <sup>[25]</sup>	5.16 [2.95, 9.04]
	Joskowiak <i>et al.</i> , 2010 <sup>[31]</sup>	5.58 [2.96, 10.55]
	Sezai <i>et al.</i> , 2012 <sup>[34]</sup>	5.39 [3.11, 9.34]
	Hata <i>et al.</i> , 2014 <sup>[36]</sup>	5.26 [2.98, 9.31]
	Hung <i>et al.</i> , 2021 <sup>[39]</sup>	4.99 [2.86, 8.70]
	Bianchi <i>et al.</i> , 2022 <sup>[40]</sup>	5.98 [3.39, 10.56]
Diabetes	None (initial)	1.66 [0.91, 3.06]
	Ochi <i>et al.</i> , 2003 <sup>[25]</sup>	1.53 [0.81, 2.88]
	Thielmann <i>et al.</i> , 2006 <sup>[28]</sup>	1.59 [0.72, 3.53]
	Sezai <i>et al.</i> , 2012 <sup>[34]</sup>	1.89 [0.93, 3.82]
	Gaudino <i>et al.</i> , 2015 <sup>[37]</sup>	1.86 [0.95, 3.65]
	Hung <i>et al.</i> , 2021 <sup>[39]</sup>	1.53 [0.82, 2.86]
Neurological	None (initial)	2.31 [0.92, 5.79]

disease	Hirose <i>et al.</i> , 2002 <sup>[24]</sup>	1.70 [0.59, 4.91]
	Ochi <i>et al.</i> , 2003 <sup>[25]</sup>	2.68 [1.05, 6.87]
	Sezai <i>et al.</i> , 2012 <sup>[34]</sup>	2.05 [0.63, 6.72]
	Gaudino <i>et al.</i> , 2015 <sup>[37]</sup>	3.56 [1.69, 7.52]
	Grothusen <i>et al.</i> , 2017 <sup>[19]</sup>	1.79 [0.50, 6.38]
CKD	None (initial)	3.19 [1.59, 6.42]
	Hirose <i>et al.</i> , 2002 <sup>[24]</sup>	2.24 [0.99, 5.09]
	Ochi <i>et al.</i> , 2003 <sup>[25]</sup>	3.32 [1.51, 7.33]
	Thielmann <i>et al.</i> , 2006 <sup>[28]</sup>	3.50 [1.68, 7.28]
	Sezai <i>et al.</i> , 2012 <sup>[34]</sup>	4.01 [1.75, 9.19]
	Gaudino <i>et al.</i> , 2015 <sup>[37]</sup>	3.07 [1.35, 6.96]
COPD	None (initial)	1.91 [0.57, 6.37]
	Hirose <i>et al.</i> , 2002 <sup>[24]</sup>	1.31 [0.40, 4.34]
	Ochi <i>et al.</i> , 2003 <sup>[25]</sup>	1.33 [0.38, 4.61]
	Thielmann <i>et al.</i> , 2006 <sup>[28]</sup>	2.36 [0.65, 8.53]
	Sezai <i>et al.</i> , 2012 <sup>[34]</sup>	2.69 [0.64, 11.30]
	Gaudino <i>et al.</i> , 2015 <sup>[37]</sup>	2.28 [0.46, 11.32]
OPCAB	None (initial)	0.72 [0.42, 1.25]
	Locker <i>et al.</i> , 2000 <sup>[23]</sup>	0.57 [0.36, 0.90]
	Hirose <i>et al.</i> , 2002 <sup>[24]</sup>	0.70 [0.39, 1.27]
	Ochi <i>et al.</i> , 2003 <sup>[25]</sup>	0.68 [0.38, 1.21]
	Kerendi <i>et al.</i> , 2005 <sup>[26]</sup>	0.76 [0.44, 1.33]
	Onorati <i>et al.</i> , 2005 <sup>[27]</sup>	0.86 [0.49, 1.49]
	Darwazah <i>et al.</i> ,	0.75 [0.41, 1.38]



	2009 <sup>[29]</sup>	
	Kaya <i>et al.</i> , 2010 <sup>[30]</sup>	0.74 [0.40, 1.36]
	Martinez <i>et al.</i> , 2010 <sup>[32]</sup>	0.69 [0.38, 1.22]
	Fattouch <i>et al.</i> , 2011 <sup>[33]</sup>	0.78 [0.44, 1.36]
	Gaudino <i>et al.</i> , 2015 <sup>[37]</sup>	0.76 [0.42, 1.39]
	Tekin <i>et al.</i> , 2023 <sup>[41]</sup>	0.72 [0.39, 1.35]

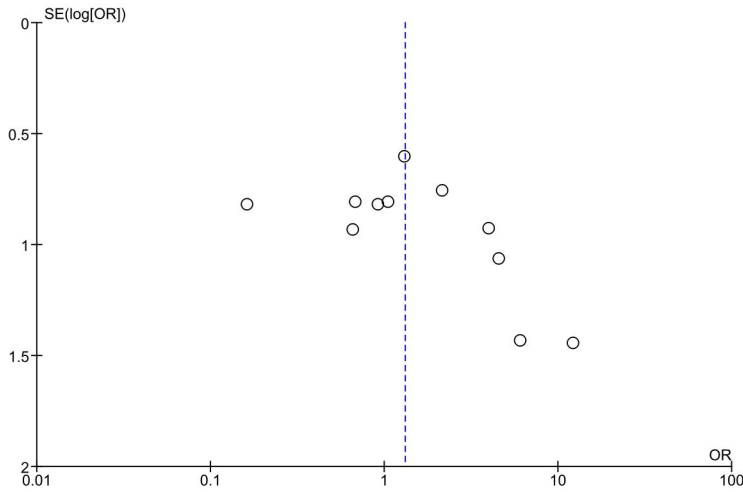
CI: Confidence interval; CKD: chronic kidney disease; COPD: chronic obstructive pulmonary disease; IABP: intra-aortic balloon pump; LMS: left main stem; LVEF: left ventricular ejection fraction; OPCAB: off-pump coronary artery bypass grafting; OR: odds ratio; PVD: Peripheral vascular disease.

**Table 3. Predictors of early mortality based on time interval between ACS onset and surgery**

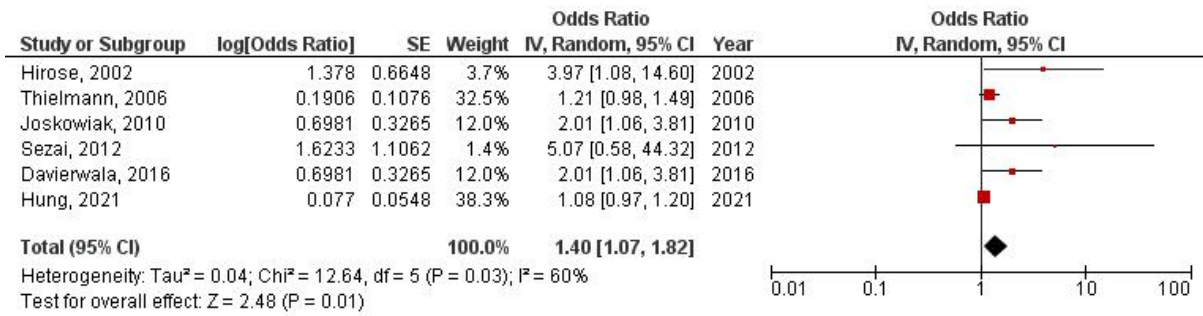
<b>Predictor</b>	<b>Time interval</b>	<b>Number of studies</b>	<b>OR, 95%CI</b>
Age	Combined	6	1.40 [1.07, 1.82]
	≤ 24 hours	2	1.62 [0.52, 5.04]
	> 24 hours	3	1.66 [0.86, 3.23]
Female gender	Combined	4	1.55 [0.61, 3.91]
	≤ 24 hours	2	2.93 [0.81, 10.56]
	> 24 hours	2	0.77 [0.20, 2.94]
Male gender	Combined	4	0.46 [0.22, 0.94]
	≤ 24 hours	2	0.36 [0.13, 0.97]
	> 24 hours	1	1.28 [0.14, 11.65]
Cardiogenic shock	Combined	7	5.35 [3.15, 9.09]
	≤ 24 hours	2	6.21 [1.74, 22.15]
	> 24 hours	4	5.93 [3.14, 11.19]
Diabetes	Combined	5	1.66 [0.91, 3.06]
	≤ 24 hours	3	1.69 [0.84, 3.41]
	> 24 hours	2	1.86 [0.35, 9.77]
Dyslipidaemia	Combined	4	1.13 [0.40, 3.19]
	≤ 24 hours	2	2.47 [0.95, 6.42]
	> 24 hours	2	0.44 [0.14, 1.41]
Hypertension	Combined	3	0.74 [0.34, 1.58]
	≤ 24 hours	2	0.55 [0.24, 1.28]
	> 24 hours	1	1.74 [0.40, 7.64]
Obesity	Combined	2	1.03 [0.36, 2.95]
	≤ 24 hours	2	1.03 [0.36, 2.95]
	> 24 hours	-	-
Neurological disease	Combined	5	2.31 [0.92, 5.79]
	≤ 24 hours	2	1.71 [0.33, 8.85]
	> 24 hours	3	2.53 [0.71, 8.98]
CKD	Combined	5	3.19 [1.59, 6.42]

	≤ 24 hours	3	1.88 [0.73, 4.90]
	> 24 hours	2	5.87 [2.10, 16.38]
COPD	Combined	5	1.91 [0.57, 6.37]
	≤ 24 hours	3	1.41 [0.22, 9.05]
	> 24 hours	2	2.83 [0.33, 23.90]
PVD	Combined	2	1.88 [0.29, 11.98]
	≤ 24 hours	-	
	> 24 hours	2	1.88 [0.29, 11.98]
IABP	Combined	3	3.55 [1.30, 9.71]
	≤ 24 hours	3	3.55 [1.30, 9.71]
	> 24 hours	-	-
LMS disease	Combined	4	1.48 [0.75, 2.93]
	≤ 24 hours	3	1.38 [0.68, 2.81]
	> 24 hours	1	3.50 [0.28, 43.17]
LVEF < 30%	Combined	3	2.46 [1.00, 6.04]
	≤ 24 hours	1	1.52 [0.42, 5.50]
	> 24 hours	1	10.86 [2.00, 58.98]
OPCAB	Combined	11	0.72 [0.42, 1.25]
	≤ 24 hours	6	0.78 [0.41, 1.46]
	> 24 hours	4	0.97 [0.25, 3.76]

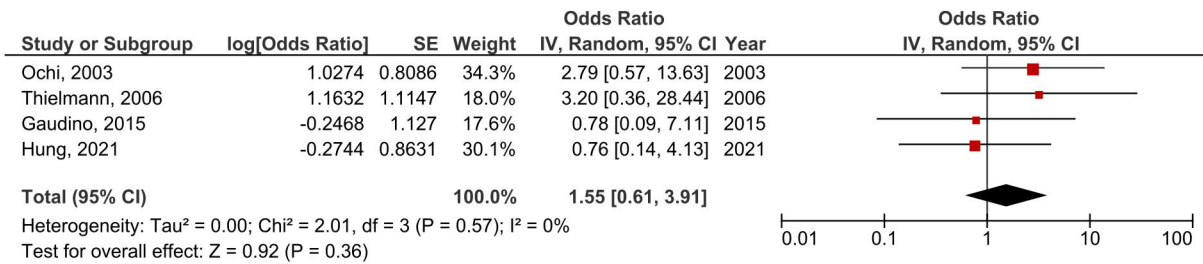
CI: Confidence interval; CKD: chronic kidney disease; COPD: chronic obstructive pulmonary disease; IABP: intra-aortic balloon pump; LMS: left main stem; LVEF: left ventricular ejection fraction; OPCAB: off-pump coronary artery bypass grafting; OR: odds ratio; PVD: peripheral vascular disease.



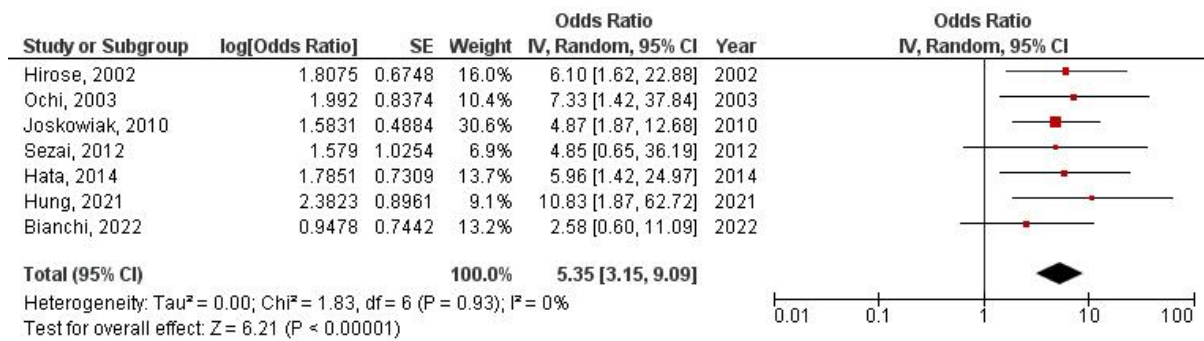
**Figure 1.** Funnel plot showing potential publication bias.



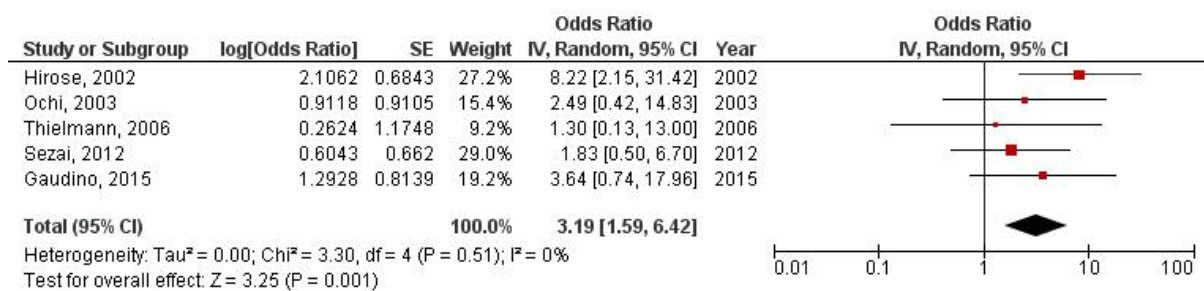
**Figure 2.** Forest plot demonstrating age as predictor of early mortality following CABG in ACS patients.



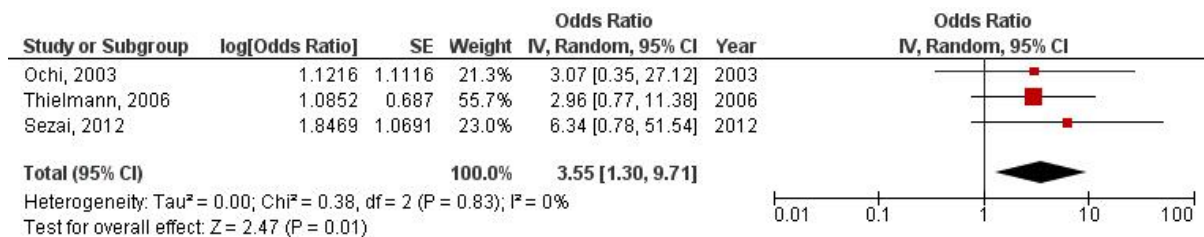
**Figure 3.** Forest plot demonstrating female gender as predictor of early mortality following CABG in ACS patients.



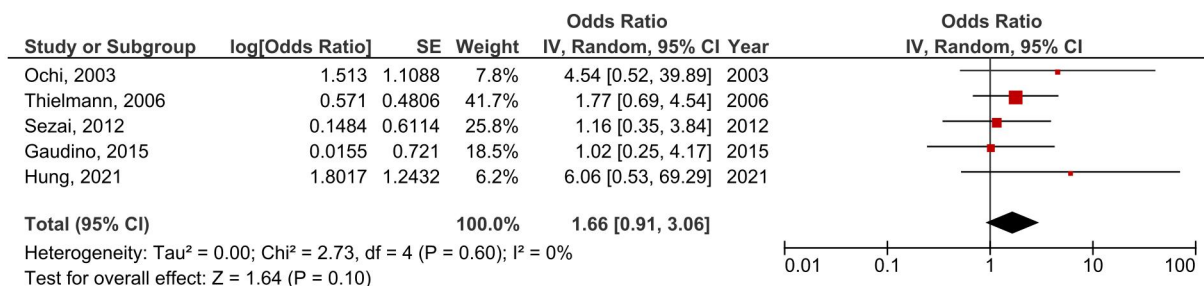
**Figure 4.** Forest plot demonstrating cardiogenic shock as predictor of early mortality following CABG in ACS patients.



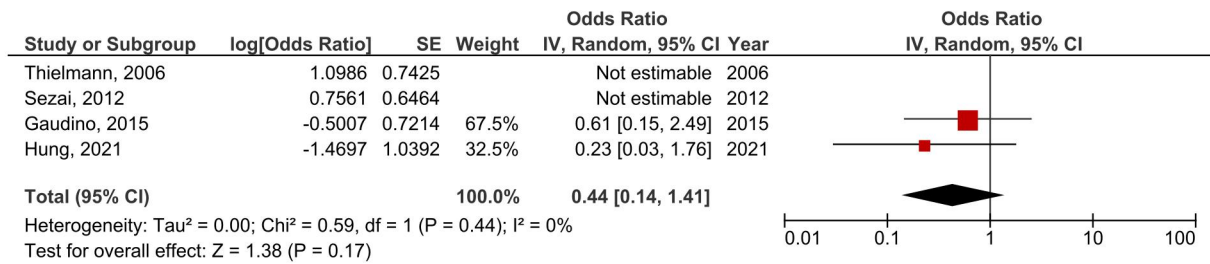
**Figure 5.** Forest plot demonstrating chronic kidney disease as predictor of early mortality following CABG in ACS patients.



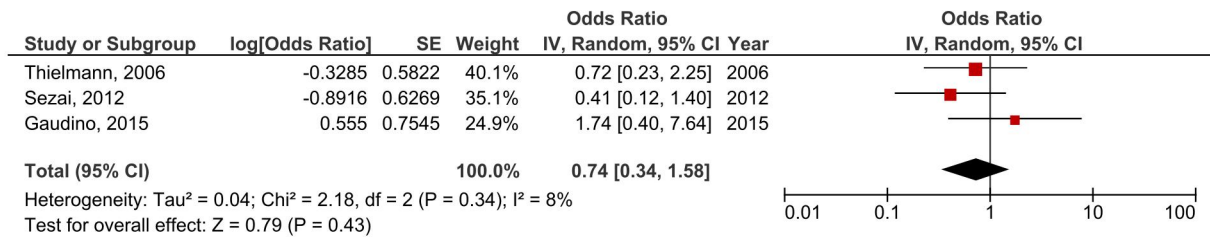
**Figure 6.** Forest plot demonstrating IABP as predictor of early mortality following CABG in ACS patients.



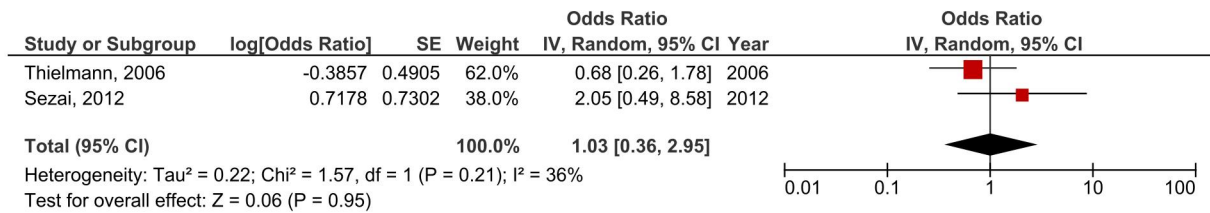
**Figure 7.** Forest plot demonstrating diabetes as predictor of early mortality following CABG in ACS patients.



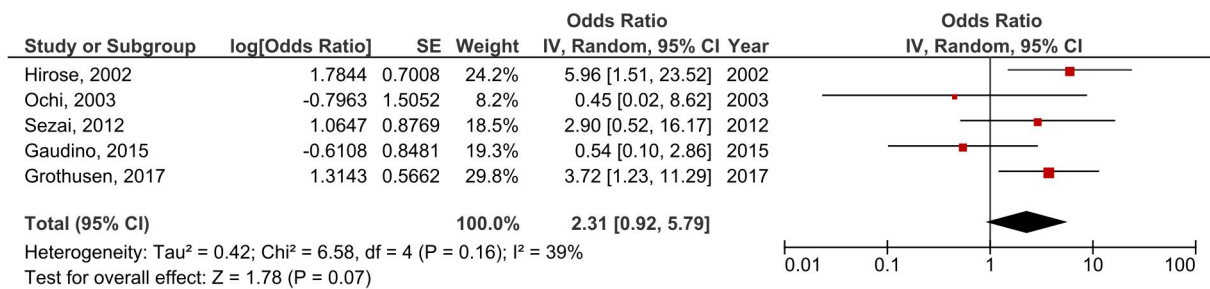
**Figure 8.** Forest plot demonstrating dyslipidaemia as predictor of early mortality following CABG in ACS patients.



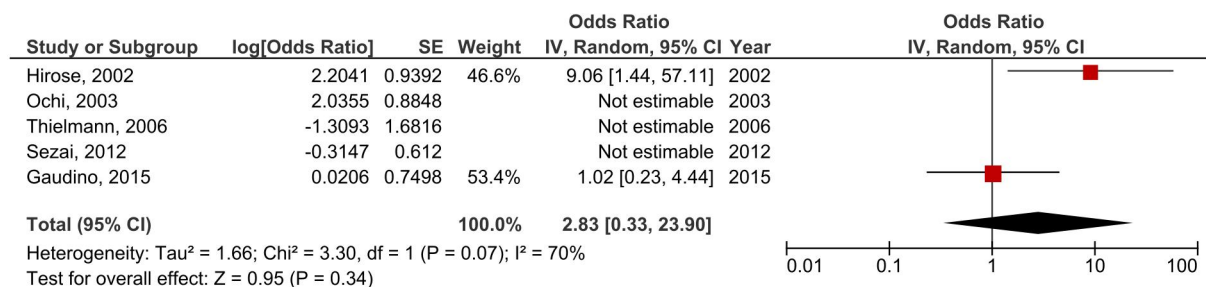
**Figure 9.** Forest plot demonstrating hypertension as predictor of early mortality following CABG in ACS patients.



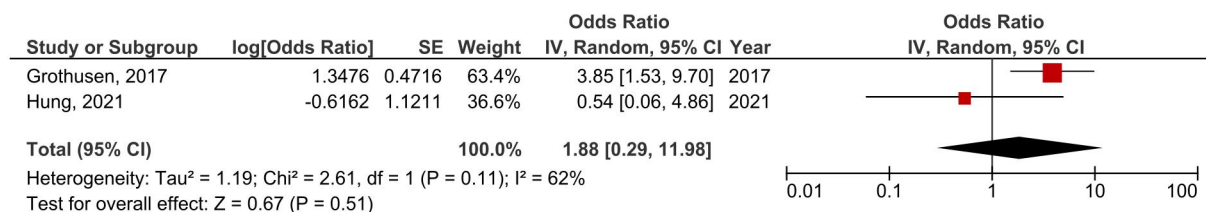
**Figure 10.** Forest plot demonstrating obesity as predictor of early mortality following CABG in ACS patients.



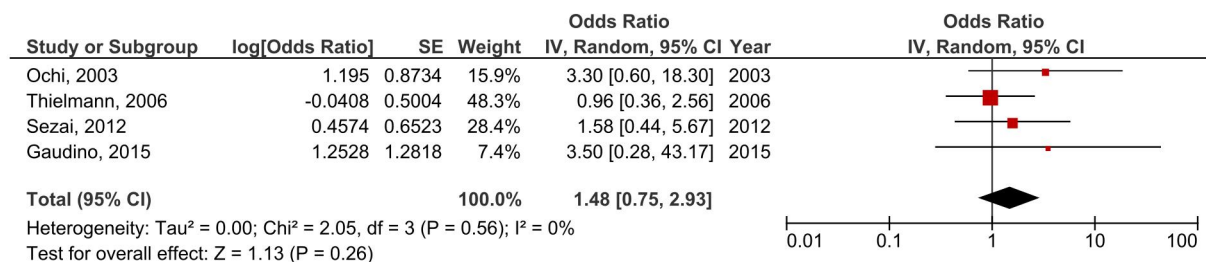
**Figure 11.** Forest plot demonstrating neurological disease as predictor of early mortality following CABG in ACS patients.



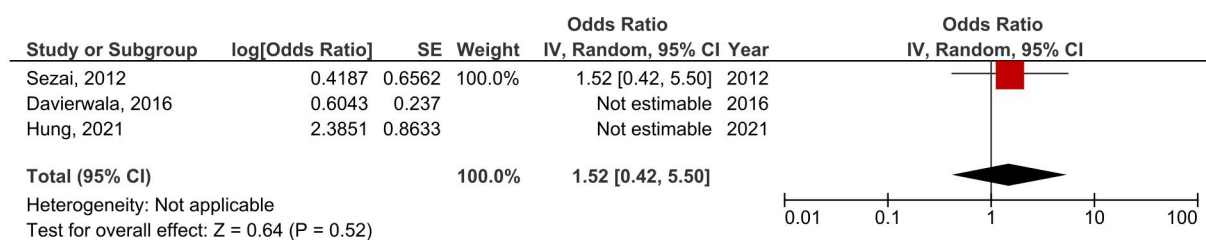
**Figure 12.** Forest plot demonstrating COPD as predictor of early mortality following CABG in ACS patients.



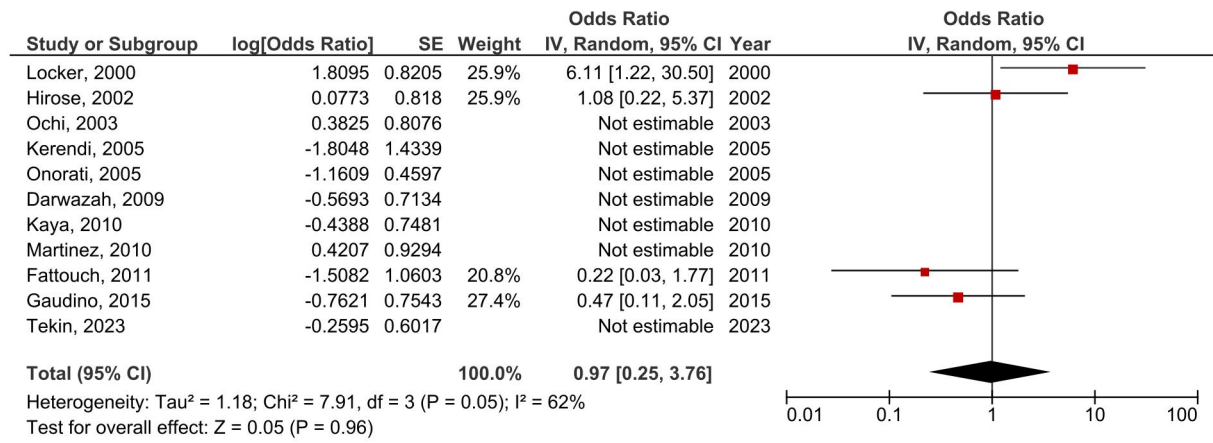
**Figure 13.** Forest plot demonstrating PVD as predictor of early mortality following CABG in ACS patients.



**Figure 14.** Forest plot demonstrating LMS disease as predictor of early mortality following CABG in ACS patients.



**Figure 15.** Forest plot demonstrating LVEF < 30% as predictor of early mortality following CABG in ACS patients.



**Figure 16.** Forest plot demonstrating OPCAB as predictor of early mortality following CABG in ACS patients.