Table 1: Prevalence of Early and Late microvascular obstruction (MVO) in different studies

Study	No. of patients	Prevalence of Early MVO n.(%)	CMR sequence	Contrast Concentration	Time of imaging (post contrast)	Prevalence of Late MVO n. (%)	CMR sequence	Contrast Concentration	Time of imaging (post contrast))
Lund et al,2004	60	23 (38%)	FPP (SR-GRE)	0.1 mmol /kg	Immediately	19 (32%)	IR-GRE	0.1 mmol	10 min
Cochet et al, 2009	184	127 (87%)	FPP (IR-GRE)	0.1 mmol/kg	Immediately	87 (47%)	IR GRE	0.1 mmol/kg	10 min
Bekkers et al, 2009	84	53(63%)	FPP (IR-GRE)	0.2 mmol/kg	2 min	45(54%)	IR-GRE	0.2 mmol/kg	10 min
Cochet et al, 2010	61	28 (46%)	FPP (SR-GRE)	0.1 mmol/kg	Immediately	17 (28%)	PSIR-GRE	0.1 mmol/kg	10 min
De waha et al, 2010	438	332 (78%)	FPP (IR-GRE)	0.15 mmol/kg	Immediately	296 (67.5%)	IR GRE	0.15 mmol/kg	15 min
De waha et al, 2012	322	257 (82%)	FPP (IR-GRE)	0.2 mmol/kg	1 min	228 (72%)	IR-GRE	0.2 mmol/kg	15 min
Bogaert et al, 2007	52	32 (61%)	FPP (SR-GRE)	0.05 mmol/kg	2-5 min	27 (52%)	3D-IR-GRE	0.2 mmol/kg	10-25 min
Yan et al, 2006	25	21(84%)	FPP (SR-GRE-EPI)	0.1 mmol/kg	immediate	9 (36%)	IR-GRE	0.2 mmol/kg	10 min
Nijveldt et al, 2009	63	44(70%)	FPP (SR GRE)	0.1 mmol/kg	Immediately	37 (59%)	IR-GRE	0.2 mmol/kg	12-15 min
Nijveldt et al, 2008	60	41 (68%)	FFP (SR-GRE)	0.1 mmol/kg	Immediately	34 (57%)	IR-GRE	0.2 mmol/kg	12-15 min
Weir et al,2010	100	69(69%)	FPP (IR-SSFP)	0.1 mmol/kg	2 min	56(56%)	IR-GRE	0.1 mmol/kg	15 min
Wong et al, 2012	40	29 (73%)	FPP (SR-GRE)	0.1 mmol/kg	immediately	31 (78%)	IR-GRE	0.2 mmol/kg	10 min
Orn et al, 2009	42	16(38%)day 2; 15 (34%) 1 wk	FPP (SR-GRE)	0.075 mmol/kg	Immediately	14(33%) day 2; 9 (21%) 1 wk	IR-GRE	0.25 mmol/kg	10-15 min
Wu et al, 1998	44	11 (25%)	FPP (IR-GRE)	0.1 mmol/kg	Immediately				
Klug et al, 2012	107	74(69%)	FPP (IR-SSFP)	0.1 mmol/kg	Immediately				
Mather et al, 2011	48	30 (63%)	FPP (IR-GRE)	0.2 mmol/kg	1-4 min				
Eitel et al,2013	795	390 (49%)	FPP (IR-GRE	0.15 mmol/kg	Immediately				
Bruder et al, 2008	67	41 (61%)	FPP (IR-SSFP)	0.2 mmol/kg	Immediately				
Amabile et al, 2010	112					63 (56%)	IR-GRE	0.2 mmol/kg	10 min
Malek et al, 2012	53					32 (60%)	IR-GRE	0.1 mmol/kg	10-15 min
Vicente et al, 2009	39					26 (68%)	3D-IR-GRE	0.2 mmol/kg	10 min
Tarantini et al, 2006	76					28 (36%)	IR-GRE	0.2 mmol/kg	10 min
Hadamitzky et al, 2013	283					99 (35%)	IR-GRE	0.2 mmol/kg	15 min
Hombach et al, 2005	110					51 (46%)	3D-IR-GRE	0.2 mmol/kg	6-12 min
Wu et al, 2008	122					51 (42%)	IR-GRE	0.2 mmol/kg	10 min
Bodi et al, 2009	214					67 (31%)	IR-SSFP	0.1 mmol/kg	10 min
Eitel et al, 2011	346					236 (66%)	IR-GRE	0.2 mmol/kg	10-15 min

Nijveldt et al, 2007	**40**					23 (57.5%)	IR-GRE	0.2 mmol/kg	12-15 min
Pooled	2607(EMVO) 2926 (LMVO)	65% (Range: 63-66)				54% (Range: 52-56)			

Abbreviation: FPP: First pass perfusion, IR:Inversion Recovery, SR:Saturation Recovery, GRE: gradient echo, PSIR: Phase sensitive inversion recovery, SSFP – steady state free precession, EPI-echoplanar imaging.

Table 2: Prevalence of Intramyocardial Hemorrhage (IMH) in different studies

Study	**No. of patients n. (%)**	**Prevalence of IMH (n.(%)**
Ochiai et al, 1999	39	13 (33%0
Ganame et al, 2009	98	24 (24%)
O'Reagan e tal, 2010	50	29 (58%)
Mather et al, 2010	48	12 (25%)
Beek et al, 2010	45	22 (49%)
Beekers et al, 2010	90	39 (43%)
Husser et al, 2010	304	102 (33.5%)
Pooled	674	35% (Range: 31-38)

Table 3a: Data from studies looking at effect of Intramyocardial hemorrhage (IMH) on baseline left ventricular ejection fraction (LVEF)

	IMH present			IMH absent				Mean difference
Study	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI
Ochiai_1999	47	9	13	53	10	26	9.30%	-6.00 [-12.22, 0.22]
O'Reagan_2012	51	11	29	59	7	21	12.20%	-8.00 [-13.00, -3.00]
Mather_2010	34.6	8.1	12	46.1	9.3	18	9.20%	-11.50 [-17.78, -5.22]
Husser_2012	43	11	102	56	12	202	20.30%	-13.00 [-15.70, -10.30]
Ganame_2009	42.8	6.5	24	49.3	7.9	74	18.40%	-6.50 [-9.66, -3.34]
Beekers_2010	47	7	39	55	8	41	17.90%	-8.00 [-11.29, -4.71]
Beek_2010	38.9	8.1	22	46.4	8.4	23	12.70%	-7.50 [-12.32, -2.68]
Total (95% CI)			241			405	100.00%	-8.81 [-11.13, -6.49]
Heterogeneity: $Tau^2 = 4.99$; $Chi^2 = 13.14$, df = 6 (P = 0.04); $I^2 = 54\%$								
Test for overall effect: Z = 7.45 (P < 0.00001)								

Table 3b: Data from studies looking at effect of Intramyocardial hemorrhage (IMH) on baseline Infarct size (IS):

	IMH present			IMH absent				Mean difference
Study	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI
O'Reagan_2012	23.8	8.2	29	12	5.9	21	23.80%	11.80 [7.89, 15.71]
Beek_2010	24.4	7	22	11.3	7.3	23	22.80%	13.10 [8.92, 17.28]
Ganame_2009	28.9	12.2	24	15.8	11.2	74	18.20%	13.10 [7.59, 18.61]
Husser_2012	35	15	102	16	11	202	26.20%	19.00 [15.72, 22.28]
Mather_2010	36.2	15.3	12	16.3	9.4	18	9.10%	19.90 [10.22, 29.58]
Total (95% CI)			189			338	100.00%	14.96 [11.54, 18.37]
Heterogeneity: $Tau^2 = 8.79$; $Chi^2 = 10.49$, df = 4 (P = 0.03); $I^2 = 62\%$								
Test for overall effect: Z = 8.59 (P < 0.00001)								

Table 3c: Data from studies looking at effect of Intramyocardial hemorrhage (IMH) on baseline Left ventricular end-diastolic volume index (LVEDVi)

	IMH present			IMH absent				Mean difference
Study	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI
Beek_2010	104	22	22	89	22	23	8.80%	15.00 [2.14, 27.86]
Beekers_2010	88	17	39	81	14	41	27.10%	7.00 [0.16, 13.84]
Husser_2012	91	27	102	75	21	202	33.50%	16.00 [10.01, 21.99]
Mather_2010	102.1	12.6	12	85.4	14.7	18	14.40%	16.70 [6.85, 26.55]
O'Reagan_2012	81	21.4	29	67.1	11.4	21	16.30%	13.90 [4.71, 23.09]
Total (95% CI)			204			305	100.00%	13.24 [9.32, 17.16]
Heterogeneity: $Tau^2 = 2.59$; $Chi^2 = 4.58$, df = 4 (P = 0.33); I^2 = 13%								
Test for overall effect: Z = 6.62 (P < 0.00001)								

Table 3d: Data from studies looking at effect of Intramyocardial hemorrhage (IMH) baseline Left ventricular end-systolic volume index (LVESVi)

	IMH present			IMH absent				Mean difference
Study	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI
Amabile_2012	46.8	16.3	11	33.5	11.7	103	8.10%	13.30 [3.41, 23.19]
Beek_2010	65	19	22	49	17	23	7.10%	16.00 [5.45, 26.55]
Beekers_2010	47	13	39	38	11	41	28.30%	9.00 [3.71, 14.29]
Husser_2012	53	23	102	34	17	202	31.20%	19.00 [13.96, 24.04]
Mather_2010	66.8	11.5	12	46.7	13.9	18	9.50%	20.10 [10.96, 29.24]
O'Reagan_2012	41.1	17.1	29	28.3	7.9	21	15.80%	12.80 [5.72, 19.88]
Total (95% CI)			215			408	100.00%	14.62 [11.80, 17.43]
Heterogeneity: $Chi^2 = 9.00$, df = 5 (P = 0.11); $I^2 = 44\%$								
Test for overall effect: Z = 10.18 (P < 0.00001)								

Table 4a: Data from studies looking at effect of early microvascular obstruction (EMVO) on baseline left ventricular ejection fraction (LVEF)

Study	Early MVO Present			Early MVO Absent				Mean difference
	Mean	SD	Total patients	Mean	SD	Total patients	Weight	IV, Random (95% CI)
Amabile (early),2010	46.7	1.5	63	53.4	1.6	49	17.80%	-6.70 [-7.28, -6.12]
Bekkers(early), 2009*	49	7	53	56	7	31	12.30%	-7.00 [-10.10, -3.90]
Bogaert (early),2007*	46.1	7.2	32	50.4	6.5	20	10.60%	-4.30 [-8.09, -0.51]
Cochet (early) 2010	50	17	28	60	10	33	5.10%	-10.00 [-17.16, -2.84]
Klug (early) 2012	39.2	11.4	74	46.1	8.9	33	10.10%	-6.90 [-10.90, -2.90]
mather (early), 2011*	47.1	8.1	30	53	8.6	18	8.20%	-5.90 [-10.82, -0.98]
Nijveldt (early), 2009#	40.7	8.7	44	46.4	8.8	19	8.60%	-5.70 [-10.42, -0.98]
Orn(early2d),2 days*	49.3	2.4	16	50.5	2.8	11	15.10%	-1.20 [-3.23, 0.83]
Weir (early), 2010	48.3	8	69	50.5	10.1	31	10.10%	-2.20 [-6.23, 1.83]
Wu(early),1998,	48.8	20	11	54.3	12	33	2.10%	-5.50 [-18.01, 7.01]
Total (95% CI)			420			278	100.00%	-5.21 [-7.13, -3.30]
Heterogeneity: Tau^2 = 5.24; Chi^2 = 32.43, df = 9 (P = 0.0002); I^2 = 72%								

***= Assessed eMVO on early post gadolinium enhanced images 2-5 min post contrast administration. #= Assessed eMVO both on first pass perfusion as well as on early post gadolinium enhanced images.**

Table 4b: Data from studies looking at effect of early microvascular obstruction (EMVO) on baseline Infarct size (IS):

Study	Early MVO Present			Early MVO Absent				Mean difference
	Mean	SD	Total patients	Mean	SD	Total patients	Weight	IV, random (95% CI)
Amabile (early),2010	18.7	1.2	63	9	1.3	49	15.70%	9.70 [9.23, 10.17]
Bekkers(early), 2009_base	21	9	53	6	8	31	10.90%	15.00 [11.28, 18.72]
Bogaert (early),2007,base	20.7	10.8	32	11.3	7.5	20	8.80%	9.40 [4.42, 14.38]
Cochet (early) 2010	15	7	28	4	6	33	11.70%	11.00 [7.70, 14.30]
Klug (early) 2012	24.9	15.2	74	15.5	16.1	33	6.70%	9.40 [2.91, 15.89]
mather (early), 2011	19.8	9.5	18	11.3	9.4	18	7.10%	8.50 [2.33, 14.67]
Nijveldt (early), 2009	21	8	44	8.4	6.5	19	10.90%	12.60 [8.84, 16.36]
Orn(early2d),2 days	16.2	1.6	16	10.8	1.8	11	14.90%	5.40 [4.08, 6.72]
Weir (early), 2010	39.6	20.8	69	19.1	11.7	31	6.80%	20.50 [14.09, 26.91]
Wu (early), 1998	32.6	9.6	11	22.9	10	33	6.60%	9.70 [3.08, 16.32]
Total (95% CI)			408			278	100.00%	10.71 [8.49, 12.92]
Heterogeneity: Tau^2 = 8.11; Chi^2 = 60.80, df = 9 (P < 0.00001); I^2 = 85%								
Test for overall effect: Z = 9.47 (P < 0.00001)								

Table 4c: Data from studies looking at effect of early microvascular obstruction (EMVO) on baseline Left ventricular end-diastolic volume index (LVEDVi)

Study	Early MVO Present			Early MVO Absent				Mean difference
	Mean	SD	Total patients	Mean	SD	Total patients	Weight	IV, random (95% CI)
Amabile (early),2010	72.2	2.2	63	67.3	2.8	49	25.80%	4.90 [3.95, 5.85]
Bekkers(early), 2009_base	87	17	53	81	14	31	13.00%	6.00 [-0.73, 12.73]
Bogaert (early),2007,base	83	15.2	32	79.4	10.1	20	12.70%	3.60 [-3.28, 10.48]
Cochet (early) 2010	84	28	28	75	21	33	5.70%	9.00 [-3.61, 21.61]
mather (early), 2011	89.5	21.8	30	81.8	18.5	18	6.50%	7.70 [-3.87, 19.27]
Nijveldt (early), 2009	103.2	22.8	44	91.8	26.9	19	4.90%	11.40 [-2.45, 25.25]
Orn(early2d),2 days	91.8	3.1	16	79.5	5	11	21.10%	12.30 [8.98, 15.62]
Weir (early), 2010	84.5	16.7	69	84	21	31	10.20%	0.50 [-7.88, 8.88]
Total (95% CI)			335			212	100.00%	6.73 [3.32, 10.14]
Heterogeneity: $Tau^2 = 11.46$; $Chi^2 = 20.41$, df = 7 (P = 0.005); $I^2 = 66\%$								
Test for overall effect: Z = 3.87 (P = 0.0001)								

Table 4d: Data from studies looking at effect of early microvascular obstruction (EMVO) on baseline Left ventricular end-systolic volume index (LVESVi)

Study	Early MVO Present			Early MVO Absent				mean difference
	Mean	SD	Total patients	Mean	SD	Total patients	Weight	IV, random (95% CI)
Amabile (early),2010	37.7	1.8	63	31	1.8	49	89.40%	6.70 [6.03, 7.37]
Bekkers(early), 2009_base	45	13	53	37	11	31	1.50%	8.00 [2.78, 13.22]
Bogaert (early),2007,base	45	11	32	39.5	7.8	20	1.50%	5.50 [0.38, 10.62]
Cochet (early) 2010	46	31	28	30	14	33	0.30%	16.00 [3.56, 28.44]
mather (early), 2011	48.5	19.1	18	39.2	15.4	18	0.30%	9.30 [-2.03, 20.63]
Nijveldt (early), 2009	62.1	20.1	44	50.9	21.3	19	0.30%	11.20 [-0.07, 22.47]
Orn(early2d),2 days	47.1	3.1	16	40	3.6	11	5.90%	7.10 [4.49, 9.71]
Weir (early), 2010	44.3	13.4	69	42.7	18.8	31	0.80%	1.60 [-5.73, 8.93]
Total (95% CI)			323			212	100.00%	6.73 [6.10, 7.37]
Heterogeneity: Tau^2 = 0.00; Chi^2 = 5.35, df = 7 (P = 0.62); I^2 = 0%								
Test for overall effect: Z = 20.77 (P < 0.00001)								

Table 5a: Data from studies looking at effect of Late microvascular obstruction (LMVO) on baseline left ventricular ejection fraction (LVEF)

Study	Late MVO Present			Late MVO Absent				Mean difference
	Mean	SD	Total patients	Mean	SD	Total patients	Weight	IV, fixed (95% CI)
Bekkers (late),2009	48	7	45	56	7	31	21.70%	-8.00 [-11.20, -4.80]
Cochet (late) 2010	44	20	17	60	9	44	5.00%	-16.00 [-25.87, -6.13]
Hombach(late),2005,	54.3	10.1	51	59.3	10.8	59	18.20%	-5.00 [-8.91, -1.09]
Mewton (late), 2009	59	7	8	63	10	17	9.20%	-4.00 [-10.79, 2.79]
Nijveldt (late),2009	40	9	37	45.9	8.1	26	16.70%	-5.90 [-10.15, -1.65]
Vicente(late),2009,	44.5	11	26	51	9.4	12	9.20%	-6.50 [-13.29, 0.29]
Wier (late), 2010	48.4	7.4	56	50.5	10.1	44	19.90%	-2.10 [-5.66, 1.46]
Total (95% CI)			240			233	100.00 %	-5.82 [-8.21, -3.43]
Heterogeneity: Tau^2 = 4.17; Chi^2 = 10.52, df = 6 (P = 0.10); I^2 = 43%								
Test for overall effect: Z = 4.78 (P < 0.00001)								

Table 5b: Data from studies looking at effect late microvascular obstruction (LMVO) on baseline Infarct size (IS):

Study	Early MVO Present			Early MVO Absent				mean difference
	Mean	SD	Total patients	Mean	SD	Total patients	Weight	IV, fixed (95% CI)
Bekkers (late), 2009	23	9	45	6	8	31	13.90%	17.00 [13.15, 20.85]
Cochet (late) 2010	18	7	17	6	6	44	14.00%	12.00 [8.23, 15.77]
Hombach(late),2005,base	16.2	7.2	51	8.1	5.1	59	16.10%	8.10 [5.73, 10.47]
Mather (late), 2011	19.8	9.5	18	11.3	9.4	18	10.30%	8.50 [2.33, 14.67]
Nijveldt (late),2009	22.6	7.3	37	9.4	6.5	26	14.60%	13.20 [9.77, 16.63]
Vicente(late),2009,base	29.2	11.1	26	16.2	10.2	12	9.00%	13.00 [5.82, 20.18]
Wier (late), 2010	42.3	21.3	56	19.1	11.7	31	9.30%	23.20 [16.27, 30.13]
Wu (late), 2008	29	14	51	17	11	71	12.70%	12.00 [7.38, 16.62]
Total (95% CI)			301			292	100.00%	13.01 [9.95, 16.07]
Heterogeneity: Tau^2 = 13.64; Chi^2 = 28.64, df = 7 (P = 0.0002); I^2 = 76%								
Test for overall effect: Z = 8.34 (P < 0.00001)								

Table 5c: Data from studies looking at effect of late microvascular obstruction (LMVO) on baseline Left ventricular end-diastolic volume index (LVEDVi)

Study	Early MVO Present			Early MVO Absent				mean difference
	Mean	SD	Total patients	Mean	SD	Total patients	Weight	IV, fixed (95% CI)
Bekkers (late),2009,base	86	17	45	81	14	31	18.50%	5.00 [-2.00, 12.00]
Cochet (late) 2010	93	31	17	74	20	44	9.60%	19.00 [3.12, 34.88]
Mather (late), 2011	89.5	21.8	30	81.8	18.5	18	13.30%	7.70 [-3.87, 19.27]
Mewton (late), 2009	61	9.8	8	55.4	17.2	17	14.30%	5.60 [-5.03, 16.23]
Nijveldt (late),2009	106.6	21.3	37	89.9	25.5	26	12.90%	16.70 [4.73, 28.67]
Vicente(late),2009,base	66.2	14.9	26	77	16.8	12	13.80%	-10.80 [-21.90, 0.30]
Wier (late), 2010	84.2	16.7	56	84	21	44	17.80%	0.20 [-7.39, 7.79]
Total (95% CI)			219			192	100.00%	5.26 [-1.08, 11.60]
Heterogeneity: $Tau^2 = 43.92$; $Chi^2 = 16.08$, df = 6 (P = 0.01); $I^2 = 63\%$								
Test for overall effect: Z = 1.63 (P = 0.10)								

Table 5d: Data from studies looking at effect of late microvascular obstruction (LMVO) on baseline Left ventricular end-systolic volume index (LVESVi)

Study	Early MVO Present			Early MVO Absent				Mean difference
	Mean	SD	Total patients	Mean	SD	Total patients	Weight	IV, fixed (95% CI)
Cochet (late) 2010	57	35	17	30	13	44	11.70%	27.00 [9.92, 44.08]
Mather (late), 2011	48.5	19.1	18	39.2	15.4	18	18.10%	9.30 [-2.03, 20.63]
Mewton (late), 2009	25.3	5.9	8	21.8	13	17	24.20%	3.50 [-3.91, 10.91]
Nijveldt (late),2009	64.9	19.9	37	49.9	19.5	26	20.30%	15.00 [5.14, 24.86]
Wier (late), 2010	44	12.7	56	42.7	18.8	44	25.70%	1.30 [-5.17, 7.77]
Total (95% CI)			136			149	100.00%	9.06 [1.76, 16.37]
Heterogeneity: Tau^2 = 43.20; Chi^2 = 11.73, df = 4 (P = 0.02); I^2 = 66%								
Test for overall effect: Z = 2.43 (P = 0.02)								