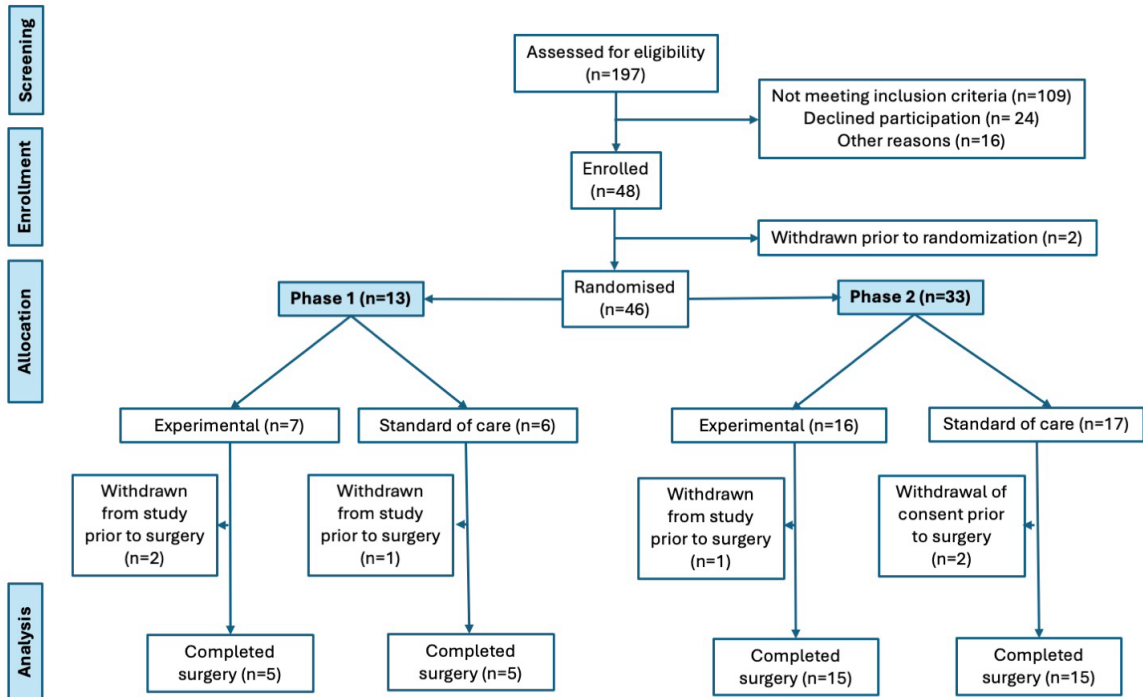


Comparison of two different antiplatelet strategies in patients with acute coronary syndromes planned to undergo coronary artery bypass graft surgery: Results of the REFINE-CABG study

Patient flow

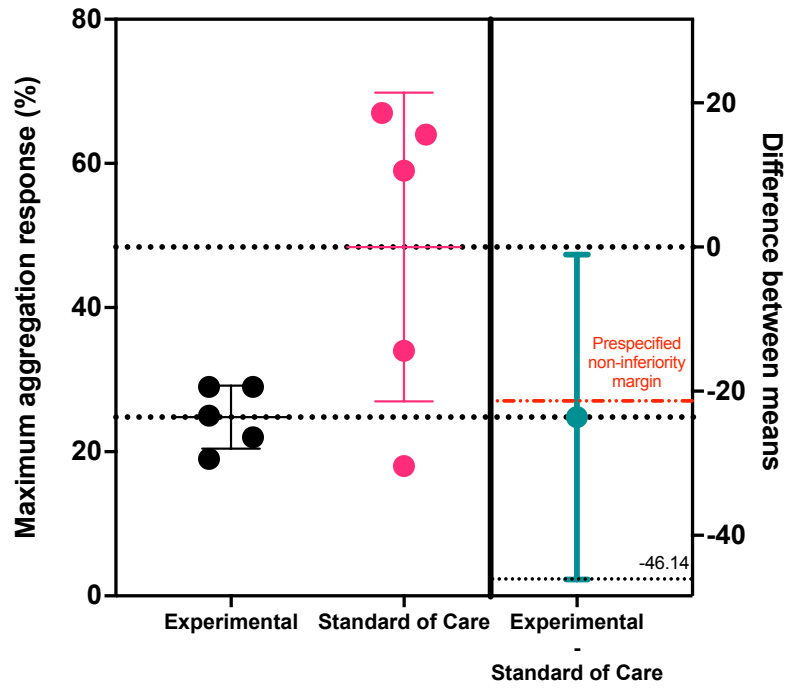


Participant characteristics

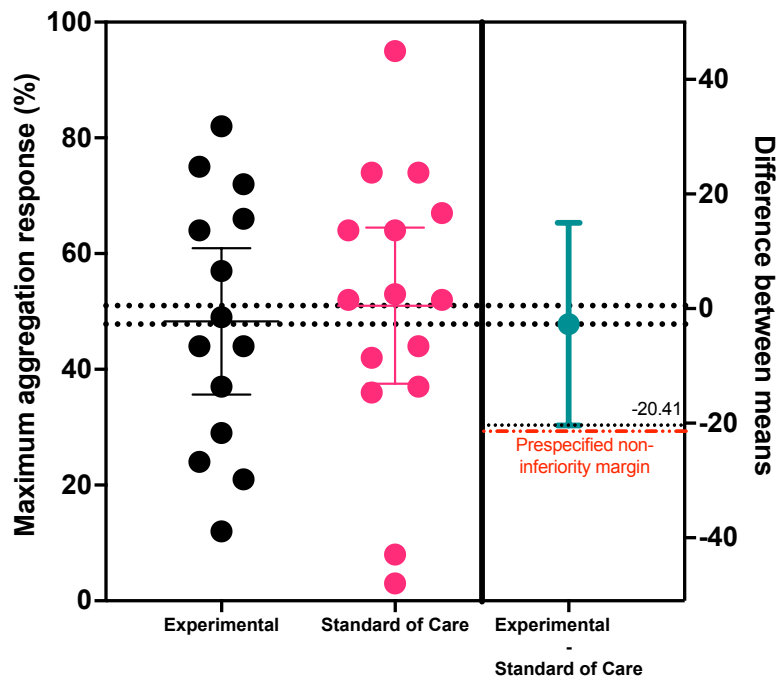
Patient characteristics	Phase 1			Phase 2		
	Experimental arm N=5	Standard of care arm N=5	P value	Experimental arm N=15	Standard of care arm N=15	P value
Baseline characteristics						
Age (years), mean \pm SD	73 \pm 8	64 \pm 12	0.21	64 \pm 7	60 \pm 9	0.16
Male, n (%)	5 (100%)	5 (100%)	>0.99	14 (93%)	14 (93%)	>0.99
Weight (kgs), mean \pm SD	85.9 \pm 14.7	103.8 \pm 17.5	0.17	96 \pm 18	90 \pm 9	0.23
BMI, mean \pm SD	30.4 \pm 8.4	33.1 \pm 3.5	0.52	31.8 \pm 5.2	31.7 \pm 5.5	0.98
Euroscore II (%), mean \pm SD	1.85 \pm 0.37	4.04 \pm 4.0	0.25	1.5 (1.2, 1.9)	2.0 (1.0, 3.6)	0.83
Hypertension, n (%)	5 (100%)	3 (60%)	0.44	13 (87%)	12 (80%)	>0.99
Dyslipidaemia, n (%)	1 (20%)	2 (40%)	>0.99	13 (87%)	15 (100%)	0.48
Diabetes Mellitus, n (%)	3 (60%)	1 (20%)	0.52	7 (47%)	6 (40%)	>0.99
CKD, n (%)	0 (0%)	0 (0%)	>0.99	1 (7%)	3 (20%)	0.60
Known IHD, n (%)	1 (20%)	0 (0%)	>0.99	4 (27%)	2 (13%)	0.65
Previous CVA, n (%)	0 (0%)	1 (20%)	>0.99	2 (13%)	0 (0%)	0.48
Bleeding requiring hospitalization, n (%)	0 (0%)	0 (0%)	>0.99	0 (0%)	2 (13%)	0.48
COVID-19 in prior 12 months, n (%)	0 (0%)	3 (60%)	0.17	3 (20%)	1 (7%)	0.60
Systolic BP (mmHg), mean \pm SD	138 \pm 16	132 \pm 24	0.68	120 \pm 10	127 \pm 16	0.19
Diastolic BP (mmHg), mean \pm SD	68 \pm 10	82 \pm 23	0.25	74 \pm 11	76 \pm 7	0.45
Heart rate (bpm), mean \pm SD	64 \pm 18	65 \pm 9	0.91	70 \pm 15	67 \pm 9	0.54
Haemoglobin (g/L), mean \pm SD	128 \pm 18	145 \pm 12	0.14	137 \pm 15	149 \pm 17	0.047
Platelet count ($\times 10^9/L$), mean \pm SD	271 \pm 103	260 \pm 51	0.85	284 \pm 65	287 \pm 88	0.91
Creatinine ($\mu\text{mol/L}$), mean \pm SD	86 \pm 8	100 \pm 21	0.22	88 (77 - 97)	84 (79 - 92)	0.96
Estimated glomerular filtration rate, mean \pm SD	76 \pm 5	65 \pm 12	0.09	67 \pm 16	71 \pm 18	0.60
Diagnosis at presentation: NSTEMI, n (%) Unstable angina, n (%) STEMI, n (%)	4 (80%) 0 1 (20%)	5 (100%) 0 0	0.07	15 (100%) 0 0	15 (100%) 0 0	>0.99
CABG procedure characteristics						
Time from last dose of aspirin (hours), mean \pm SD	24.7 \pm 0.9	13.9 \pm 11.1	0.06	51.0 \pm 6.4	23.8 \pm 11.6	<0.0001
Time from last dose of ticagrelor (hours), mean \pm SD	24.7 \pm 0.9	168.8 \pm 55.4	<0.001	49.5 \pm 2.3	129.8 \pm 16.4	<0.0001
Time from coronary angiography to surgery (days), median (IQR)	15 (11, 20)	14 (13, 25)	0.39	14 (13, 17)	14 (12, 17)	0.52
Time from randomisation to surgery (days), mean \pm SD	7 (6, 11)	11 (6, 11)	0.96	8.5 \pm 6.7	7.1 \pm 2.2	0.44
Time from admission to surgery (days), mean \pm SD	23 (18, 24)	22 (17, 24)	0.49	23.7 \pm 11.1	17.3 \pm 4.1	0.05
CPB duration (mins), mean \pm SD	109 \pm 19	117 \pm 63	0.81	84 \pm 20	83 \pm 28	0.93
CytoSorb duration (mins), mean \pm SD	108 \pm 19	N/A		81 \pm 23	N/A	
CytoSorb average flow rate, mL/min, mean \pm SD	378 \pm 136	N/A		454 \pm 111	N/A	
Isolated CABG, n (%)	5 (100%)	3 (60%)		15 (100%)	15 (100%)	>0.99
Number of grafts, median (IQR)	4 (3, 4)	3 (2, 3)	0.31	3 (3, 4)	3 (2, 3)	0.12

Primary endpoint: collagen-induced platelet aggregation post-surgery in (A) phase 1 and (B) phase 2

A



B



Clinical outcomes

Outcomes	Phase 1			Phase 2		
	Experimental arm N=5	Standard of care arm N=5	P value	Experimental arm N=15	Standard of care arm N=15	P value
Pre-CABG clinical events, randomization to surgery						
Any bleeding event, n (%)	1 (20%)	0 (0%)	-	1 (7%)	2 (13%)	-
BARC≥3 bleeding event, n (%)	0 (0%)	0 (0%)	-	0 (0%)	0 (0%)	-
Myocardial infarction or stroke, n (%)	0 (0%)	0 (0%)	-	0 (0%)	0 (0%)	-
Transfusion requirements (Intraoperative + postoperative)						
Patients with packed RBC transfusion, n (%)	3 (60%)	3 (60%)	1.00	6 (40%)	3 (20%)	0.053
Total packed RBC units, mean ± SD	4.0 ± 4.3	2.4 ± 2.9	0.51	0.67 ± 0.90	0.40 ± 1.1	0.46
Patients with platelet transfusion, n (%)	3 (60%)	3 (60%)	1.00	2 (13%)	0 (0%)	-
Total platelet units, mean ± SD	2.0 ± 2.1	1.8 ± 1.6	0.87	0.13 ± 0.35	0.0 ± 0.0	0.16
Patients with FFP transfusion, n (%)	2 (40%)	3 (60%)	0.36	0 (0%)	0 (0%)	-
Total FFP units, mean ± SD	1.8 ± 2.7	4.8 ± 5.4	0.32	-	-	-
Patients with cryoprecipitate transfusion, n (%)	1 (20%)	2 (40%)	0.36	0 (0%)	0 (0%)	-
Total cryoprecipitate units, mean ± SD	1.6 ± 3.6	1.6 ± 2.6	>0.99	-	-	-
Intraoperative + postoperative clinical outcomes						
24-hour chest tube drainage (mL), mean ± SD	1503 ± 1073	1052 ± 571	0.44	760 ± 259	719 ± 343	0.72
Surgical re-exploration for bleeding, n (%)	3 (60%)	2 (40%)	0.36	0 (0%)	2 (13%)	-
BARC-4 bleeding event, n (%)	3 (60%)	3 (60%)	1.00	0 (0%)	2 (13%)	-
UDPB ≥3 bleeding event, n (%)	3 (60%)	3 (60%)	1.00	2 (13%)	5 (33%)	0.10
Myocardial infarction or stroke at 30 days, n (%)	0 (0%)	0 (0%)	-	0 (0%)	0 (0%)	-
Death at 30 days, n (%)	1 (20%)	0	-	0 (0%)	0 (0%)	-
ICU length of stay (hours), median (IQR)	96 (95, 168)	116 (72, 149)	0.44	113 (62, 173)	96 (50, 108)	0.24
Total hospital length of stay (days), mean ± SD	33.8 ± 18.8	28.7 ± 6.1	0.59	30.0 (23.3, 51.9)	28.1 (24.7, 29.9)	0.10
Adverse events post-randomization						
Participants with any adverse event, n (%)	5 (100%)	5 (100%)	1.00	13 (87%)	12 (80%)	0.52
Participants with any adverse event related to study medication, n (%)	4 (80%)	3 (60%)	0.36	1 (7%)	4 (27%)	0.08
Any serious adverse event, n (%)	3 (60%)	3 (60%)	1.00	9 (60%)	7 (47%)	0.30
Serious adverse event related to study medication, n (%)	3 (60%)	2 (40%)	0.36	0 (0%)	2 (13%)	-
Any device-related adverse event, n (%)	0 (0%)	N/A	-	0 (0%)	N/A	-

Further details on phase 2 results

Presented at European Society of Cardiology 2025 annual scientific meeting:

https://academic.oup.com/eurheartj/article/46/Supplement_1/ehaf784.3287/8308454