Supplemental Online Content

Moss A, Daghem M, Tzolos E, et al. Coronary atherosclerotic plaque activity and future coronary events. *JAMA Cardiol*. Published online June 28, 2023. doi:10.1001/jamacardio.2023.1729

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

eTable 1. Participant Recruitment per Site

Site	Patients approached	First patient approached	Patients consented and screened	PET-CT scan completed
Edinburgh	454	28 Sep 2015	271 (60%)	205
Aberdeen	901	02 Dec 2015	178 (20%)	134
Manchester	490	25 Jan 2016	202 (41%)	138
Oxford	476	15 Feb 2016	164 (34%)	115
Leeds	225	18 Sep 2017	105 (47%)	70
Birmingham	55	08 Nov 2017	42 (76%)	24
Cambridge	26	07 Mar 2018	20 (77%)	10
Los Angeles	14	20 June 2019	7 (50%)	5
Adelaide	43	24 Jul 2019	6 (14%)	5
Total	**2684**		**995 (37%)**	**706**

eTable 2. Scanner Type by Center

Site	PET Scanner	CT Scanner
Edinburgh	128-slice Biograph mCT, Siemens Medical Systems	128-slice Biograph mCT, Siemens Medical Systems
Aberdeen	GE Discovery 710 PET/CT	GE Discovery 710 PET/CT CT component of this is the GE Lightspeed system
Manchester	Until Oct 2018 - Siemens Biograph mCT (64-slice CT) After Oct 2018 - Siemens Biograph Vision (64-slice CT)	Until Oct 2018 - Siemens Biograph mCT (64-slice CT) After Oct 2018 - Siemens Biograph Vision (64-slice CT) Some of the 2-year visit CT scans were performed on Siemens Somatom Definition AS (128 slice CT).
Oxford	GE Discovery 690 PET/CT	GE Discovery 690 PET/CT
Leeds	64-slice CT (GE Discovery 690 and 710 models)	64-slice CT (GE Discovery 690 and 710 models)
Birmingham	Siemens Biograph mCT Flow	Siemens Somatom Definition 64-slice scanner SAFIRE
Cambridge	PET/CT GE Discovery 690	PET/CT GE Discovery 690
Los Angeles	GE Discovery PET/CT 710 (GE Medical Systems)	SOMATOM Definition scanner (Force, Siemens Medical)
Adelaide	Biograph mCT Flow 64-slice PET/CT system (Siemens Medical Solutions USA, Inc.)	Biograph mCT Flow 64-slice PET/CT system (Siemens Medical Solutions USA, Inc.)

eTable 3. Clinical Outcomes in Quartiles of Increased Coronary Microcalcification Activity Compared With No Coronary Microcalcification Activity

	Hazard ratio (95% confidence interval)			
	0 < CMA ≤ 0.55 (n = 106)	**0.55 < CMA ≤ 1.85 (n = 105)**	**1.85 < CMA ≤ 3.87 (n = 105)**	**CMA ≥ 3.87 (n = 105)**
Primary outcome	1.27 (0.77 to 2.09)	1.26 (0.76 to 2.07)	1.20 (0.73 to 1.97)	1.29 (0.79 to 2.09)
All cause death	2.99 (1.19 to 7.55)	2.26 (0.84 to 6.07)	2.89 (1.15 to 7.29)	2.89 (1.15 to 7.29)
Cardiac death	2.85 (0.40 to 20.2)	2.83 (0.40 to 20.1)	5.59 (1.02 to 30.5)	2.77 (0.39 to 19.7)
Non-fatal myocardial infarction	1.60 (0.71 to 3.60)	1.21 (0.50 to 2.92)	1.76 (0.80 to 3.84)	1.87 (0.88 to 4.00)
Unscheduled coronary revascularisation	1.01 (0.54 to 1.91)	1.27 (0.70 to 2.28)	0.67 (0.32 to 1.40)	0.97 (0.51 to 1.82)
Cardiac death or non-fatal myocardial infarction	1.74 (0.83 to 3.66)	1.39 (0.63 to 3.07)	2.18 (1.09 to 4.36)	1.97 (0.97 to 3.99)

CMA - coronary microcalcification activity

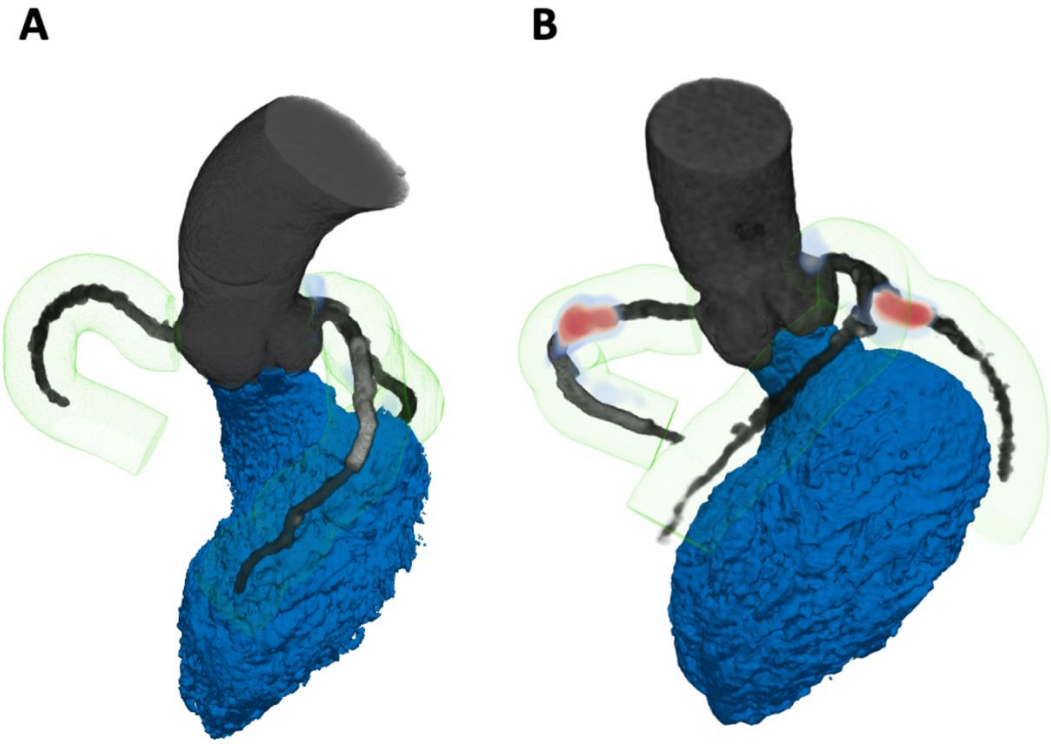
eTable 4. Site Investigator Reported Adverse Events

	Number of Events	Number of Patients	Possibly Related to IMP	Possibly Related to NIMP
All Adverse Events	**15**	**15**		
Serious Adverse Events	**2**	**2**	**0**	**2**
Palpitation	1	1	0	1
Beta-blocker induced bradycardia	1	1	0	1
Non-serious Adverse Events	**13**	**13**	**3**	**9**
Contrast reaction*	8	8	3	7
Cannula access site	5	5	0	2

IMP – Investigational medicinal product (18F-sodium fluoride)
NIMP – Non-investigational medicinal product (iodinated contrast media, beta-blockade and glyceryl trinitrate)
*Two reactions were felt to be possibly related to either the IMP or the NIMP.

eFigure 1. Measurement of Coronary Microcalcification Activity With ^{18}F-Sodium Fluoride Uptake

Example 3-dimensional reconstructions of coronary 18F-sodium fluoride positron emission tomography and computed tomography angiography in patients with (A) low uptake and no coronary microcalcification activity (CMA = 0), and (B) two areas of intense uptake in the right and circumflex coronary arteries and high coronary microcalcification activity (CMA > 0).



Three-dimensional volumes of interest in transparent green, regions of intense 18F-sodium fluoride uptake in red, aorta and coronary arteries in dark grey, coronary stent in light grey and left ventricular cavity in blue.

eFigure 2. CONSORT Diagram